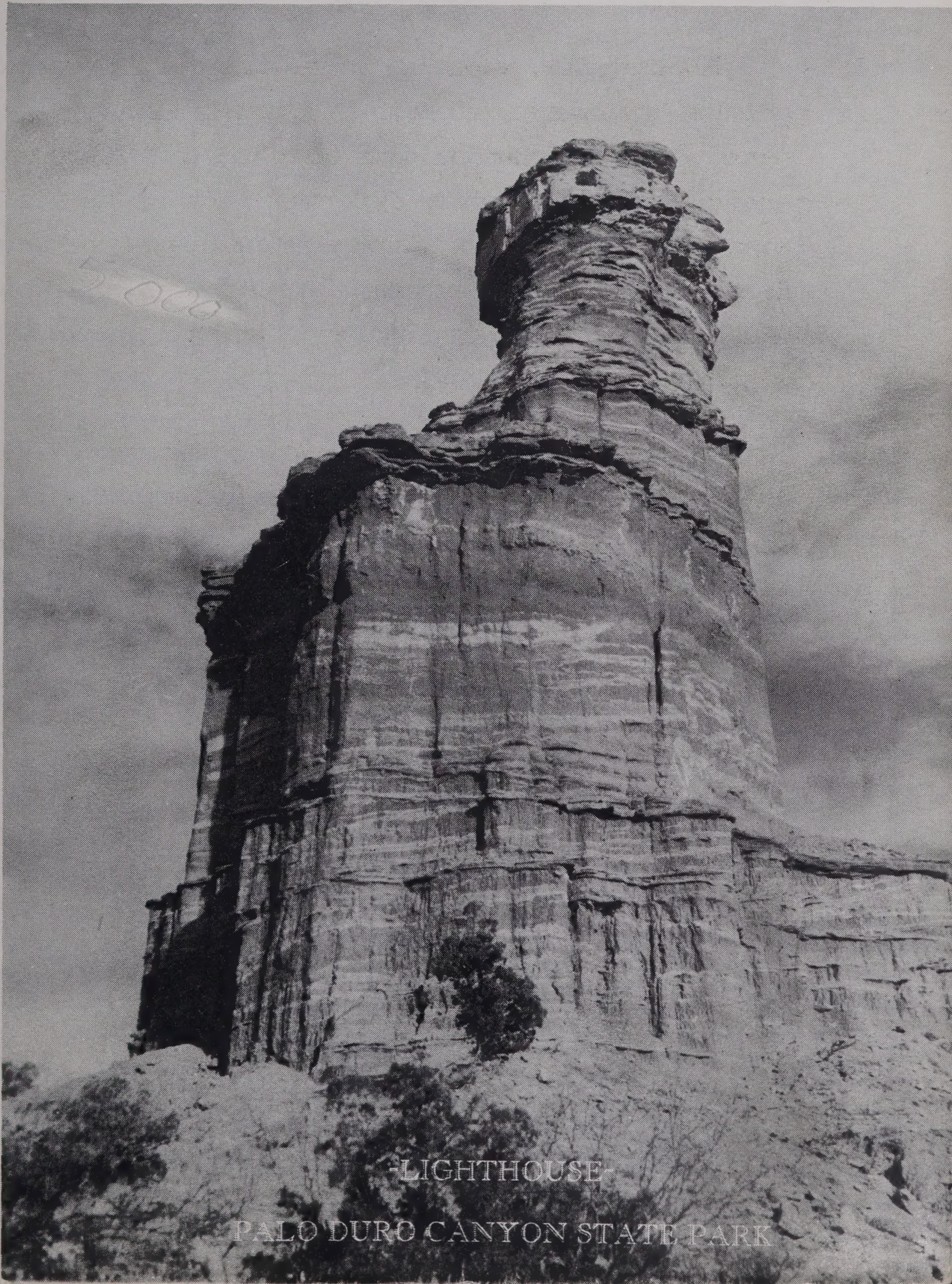
TEXAS HIGHWAY DEPARTMENT

Construction & Maintenance

BULLETIN No. 2
Sept. 1950



-LIGHTHOUSE-

PALO DURO CANYON STATE PARK

Foreword

This bulletin is published for the purpose of presenting practical information applicable to current highway problems. These conclusions and data are not necessarily endorsed by the Highway Department nor are they to be construed as instructions. Employees are invited and urged to submit suggestions and relate experiences which would benefit those engaged in the construction and maintenance of highways.

Photographic services are available and other assistance may be obtained if desired in preparing material for submission. All material and comments should be directed to the Chief Engineer, Construction & Maintenance, Austin, Texas.

Published Jointly by

Maintenance Division	D- 3
Equipment & Procurement Division	D- 4
Construction Division	D- 6
Traffic Services Division	D-16

REPRODUCED BY
OPERATIONS DIVISION
TEXAS HIGHWAY DEPARTMENT
AUSTIN,TEXAS

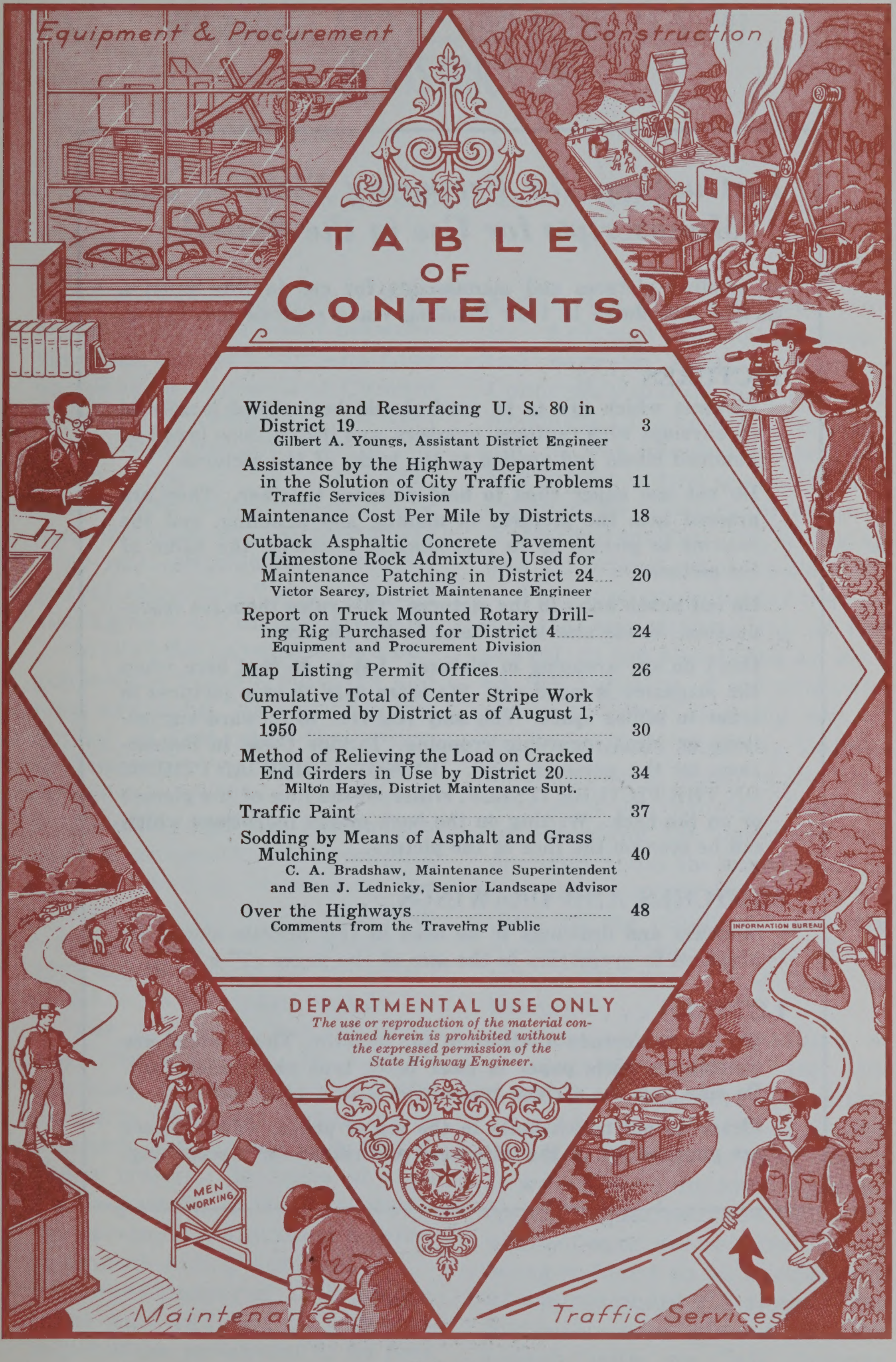


TABLE OF CONTENTS

Widening and Resurfacing U. S. 80 in District 19 3
Gilbert A. Youngs, Assistant District Engineer

Assistance by the Highway Department in the Solution of City Traffic Problems 11
Traffic Services Division

Maintenance Cost Per Mile by Districts 18

Cutback Asphaltic Concrete Pavement (Limestone Rock Admixture) Used for Maintenance Patching in District 24 20
Victor Searcy, District Maintenance Engineer

Report on Truck Mounted Rotary Drilling Rig Purchased for District 4 24
Equipment and Procurement Division

Map Listing Permit Offices 26

Cumulative Total of Center Stripe Work Performed by District as of August 1, 1950 30

Method of Relieving the Load on Cracked End Girders in Use by District 20 34
Milton Hayes, District Maintenance Supt.

Traffic Paint 37

Sodding by Means of Asphalt and Grass Mulching 40
C. A. Bradshaw, Maintenance Superintendent and Ben J. Lednicky, Senior Landscape Advisor

Over the Highways 48
Comments from the Traveling Public

DEPARTMENTAL USE ONLY

The use or reproduction of the material contained herein is prohibited without the expressed permission of the State Highway Engineer.

Instructions for Preparing Pictures and Manuscripts for Use in the Bulletin

In sending pictures and manuscripts for use in this bulletin, certain procedures in their handling make reproduction better.

PICTURES . . .

Pictures which are to be used should be inclosed loosely in an envelope with captions, numbers, and instructions typed on gummed labels and applied to the backs of the pictures.

Do not use paper clips to hold pictures together. They are pressed into the pictures in mailing and handling, and the imprint is picked up in reproducing, lessening the value of the picture.

Do not punch holes in the pictures. This ruins them for reproduction. Brads also leave holes in the pictures.

Don't do any cropping of pictures. Let us do that here when the magazine is layed out. We often need to crop pictures in order to utilize space. You may feel free to forward suggestions or ideas regarding cropping. Include these in instructions on the gummed label. DO NOT WRITE ANYTHING ON THE PICTURE ITSELF, either on the face of the picture or on the back. Writing on the back makes indentions which can be seen on the face of the picture.

SKETCHES AND DRAWINGS . . .

Sketches and drawings to be used in this bulletin should be prepared in proportion to the size of the pages (7" x 10").

LETTERS . . .

We like to reproduce letters in the bulletin. Those which are written on white paper in clear black type photograph best. Be sure you use a clean typewriter with a good ribbon.

Please do not punch holes in the top of pages. Often letters are punched out of the letterhead and ruined for reproducing.

WIDENING AND RESURFACING U. S. 80 IN DISTRICT 19

GILBERT A. YOUNGS, *Assistant District Engineer*

In 1937 that portion of U. S. 80 in Harrison County between Marshall and the Louisiana Line was paved with Portland Cement Concrete Pavement, 20 feet wide. The section was of the Bates Type--9" : 6" : 9". The roadbed and structures of bridge classification were 40 feet wide. A 10-mile section had surfaced gravel shoulders 7 feet wide and averaging 3 1/2 inches in depth.

In 1947 the pavement had begun to show signs of pumping and map cracking, and during the spring of that year the entire pavement was undersealed with OA-30 Asphalt at a rate of from 2 1/2 to 2 3/4 gallons per square yard of pavement. The pumping was practically stopped by the underseal, but the map cracking continued and in the spring of 1949 the pavement had deteriorated to an alarming degree.

The pavement deterioration was characterized by severe cracking, chalkiness, and shelling out to the extent that in many places it seemed actually to rut under traffic. In spite of this disintegration of its structure, the pavement maintained a fairly smooth riding surface.

In the summer of 1949 a contract was awarded to widen 13 miles of the pavement to 24 feet and place a 4-inch surface over it. Although the cost differential between Portland Cement Concrete widening and Hot-Mix Asphaltic Concrete was negligible, it was decided to use Hot-Mix for the entire operation because of the greater convenience it afforded traffic. The widening was all placed on one side.

The plans provided for the removing and stockpiling of the gravel in the shoulders as well as the patching of the concrete pavement and cleaning out of joints by State Highway Maintenance Forces, ahead of the contractor's operations. Material for patching the pavement was secured from the contractor at the plant on the basis of a bid item in the contract "Hot-Mix Asphaltic Concrete Pavement (Type "C" Furnished State at Plant)."

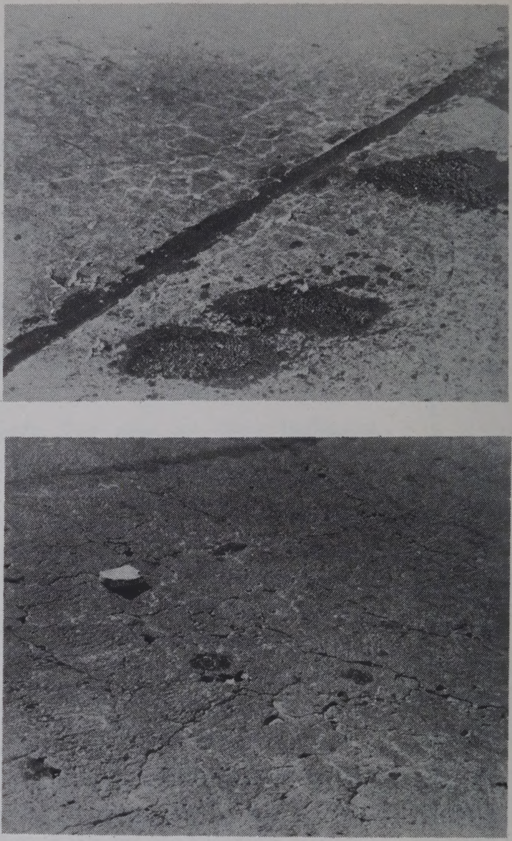
The widening consisted of a 10-inch depth of Hot-Mix Asphaltic Concrete Pavement (Type A) 4' - 4" wide at the top with a 1:1 slope at the outer edge. It was placed in four approximately equal courses, with the width of each successive course being reduced so as to maintain an approximate 1:1 slope. The material was placed in the trench with an "all purpose spreading machine" which was capable of being adjusted quickly for varying depths and widths of applications.

Immediately behind the spreading machine a "trench roller" was employed for the initial compaction, and this was followed by a tandem roller. The trench roller was capable of compacting to both edges of the widening and leaving a surface smooth and compact enough so that the tandem had no difficulty in completing the operation.

The 4-inch surfacing was of Type "C" Hot-Mix and was placed in two 2-inch courses over 1/2 width of the pavement at a time. The entire operation was carried through to completion with an absolute minimum of interference to the three to four thousand vehicles per day using the road.

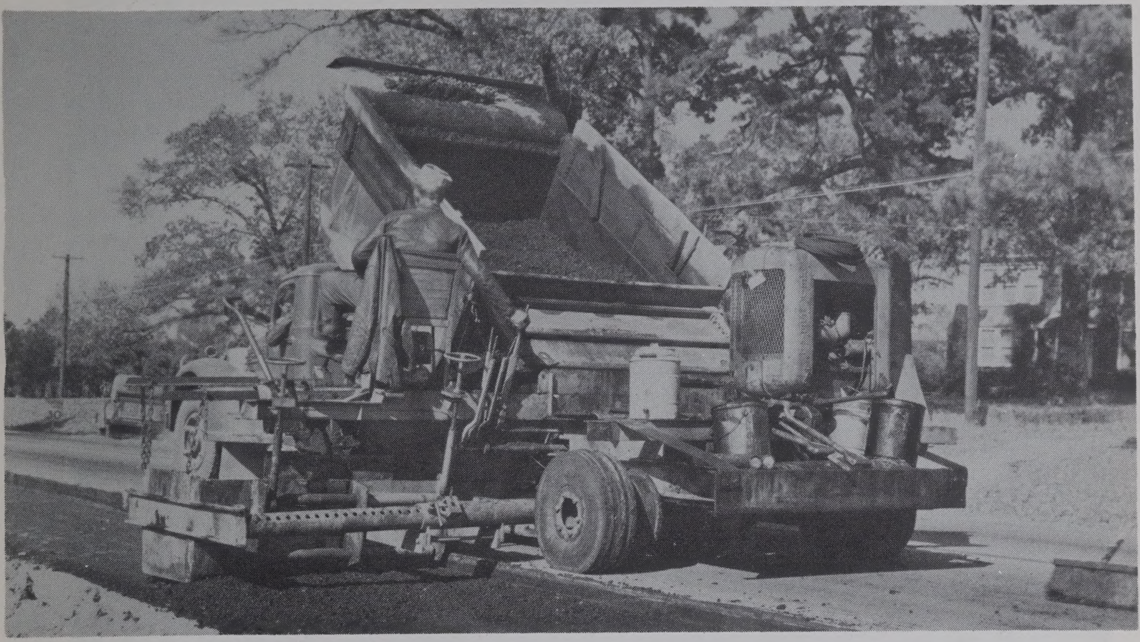
The specifications permitted the use of crushed slag as aggregate, since it appeared slag would be available from the Daingerfield smelter. Since slag was permitted and since its specific gravity varies considerably, the bid item for the Hot-Mix was on the basis of Tons of Completed Mix rather than separating it into "Asphalt" and "Aggregate." A minimum asphalt content of 4 per cent was specified and a minimum Hveem stability of 35 for the Type "A" and 45 for the Type "C" mix.

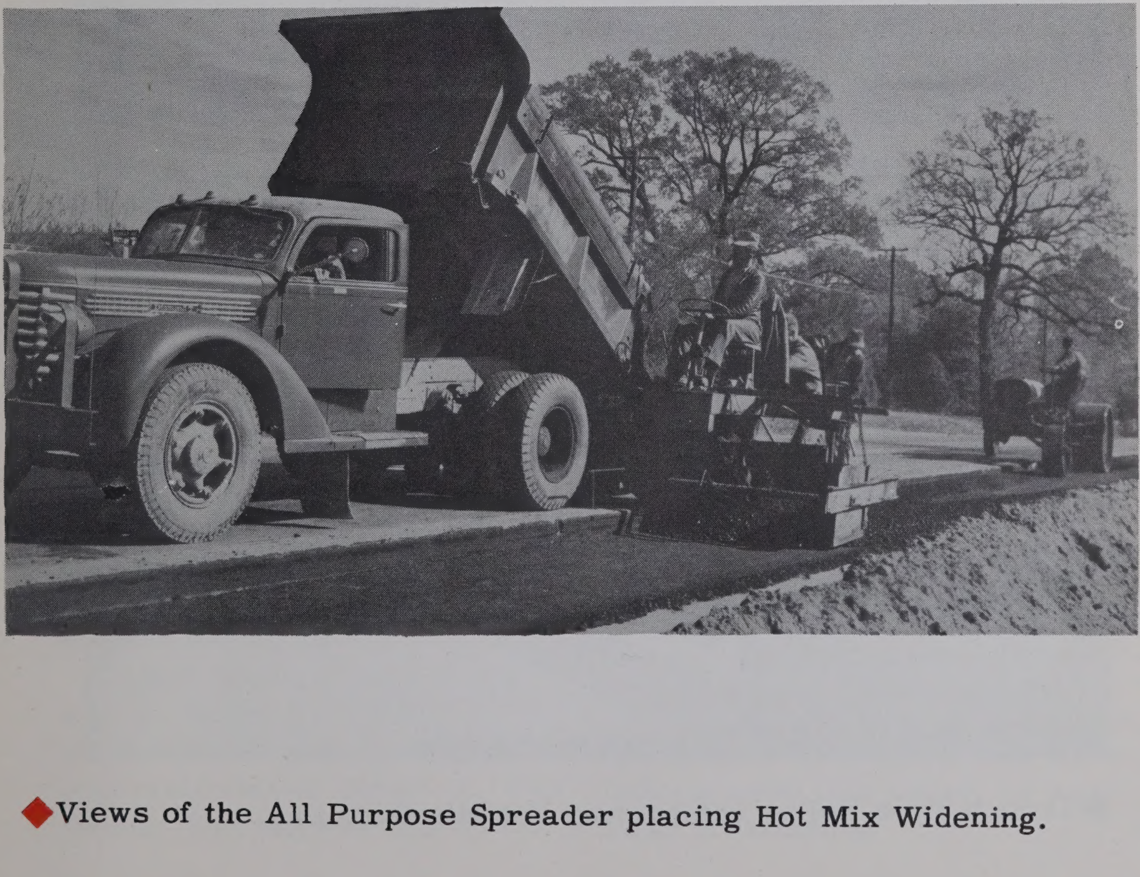
The contractor furnished uncrushed gravel rather than slag for both A and B aggregates and local field sand for aggregate C on the Type A mix. No difficulty was experienced in securing the desired results.



◆ **Old pavements with map cracking.**

The Type C mix initially consisted of uncrushed gravel and local field sand for the coarsest and finest aggregates, and crushed stone screenings for the intermediate aggregate. Preliminary tests indicated that required stabilities and densities could be obtained with this combination, but the asphalt content was critical, 4.1 per cent being the maximum with which stability could be obtained and the specifications placed the minimum asphalt at 4 per cent. Approximately 13,000 tons were placed with this aggregate on which stabilities averaged above the required 45, but the stone screenings could not be made to feed uniformly through the cold





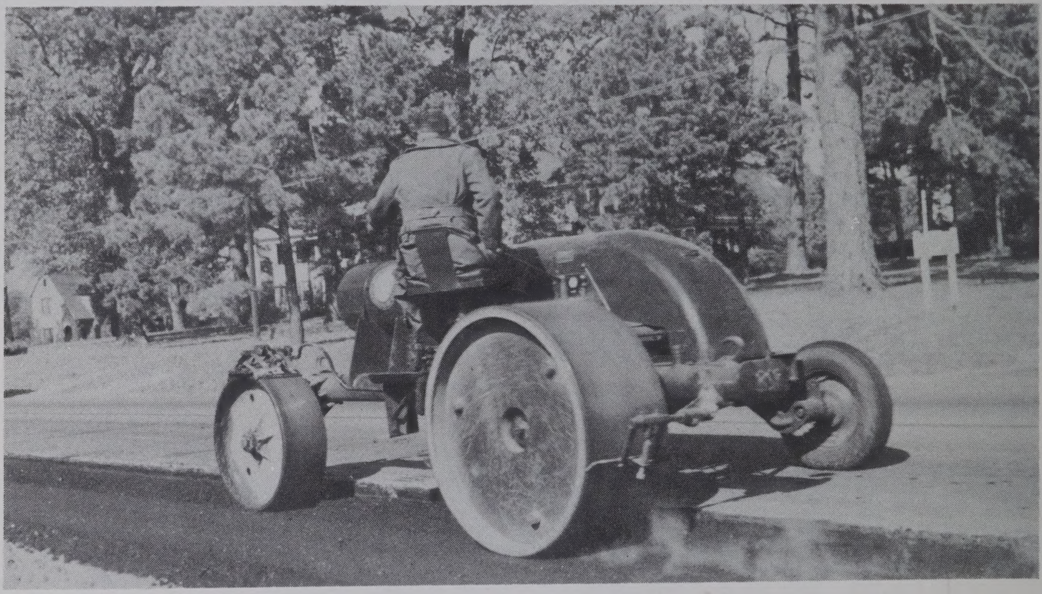
◆Views of the All Purpose Spreader placing Hot Mix Widening.

bin feeder through the varying weather conditions encountered. This resulted in a varying mix, noticeable erratic in the placing operations.

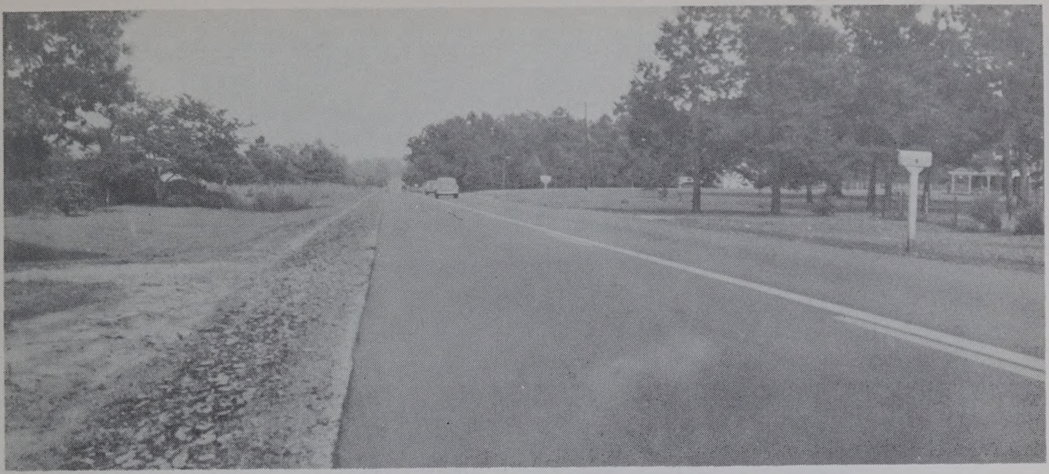
Concrete sand was substituted for the stone screenings and the project was completed with this as the intermediate aggregate. With this aggregate the asphalt content was not as critical but the field sand content became more so. Best results were obtained when the sand contents were kept near the minimum.

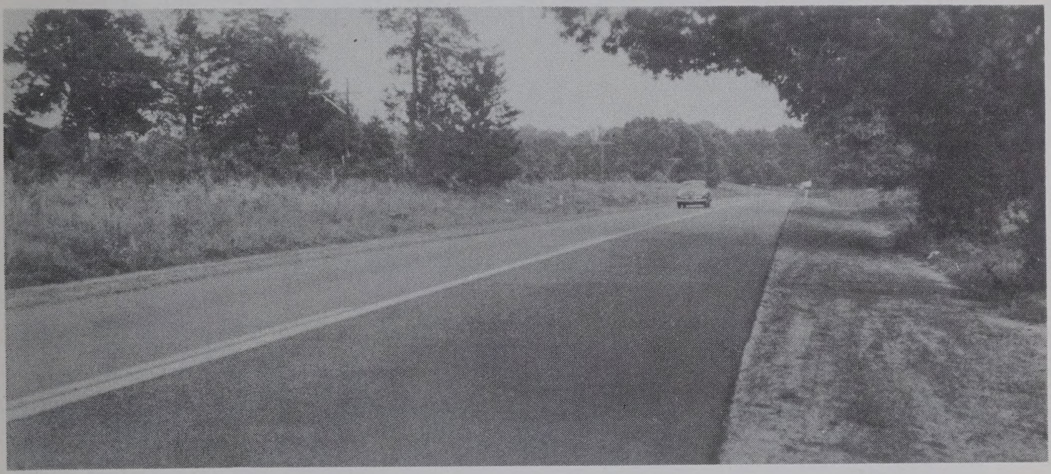
The stabilities with this aggregate ranged from 46 to as low as 32, but even when at its lowest, there was no sign of shoving under the rollers. It is the opinion of the writer that stabilities over 40 need never be specified.

After the first course of the surfacing was placed, the edge of the old concrete pavement was



◆Trench Type Roller compacting Hot Mix Widening.





◆ Views of the completed highway.

somewhat obscured and not suitable as a guide in controlling the alignment of the final course. To provide a truer guide, the State Maintenance Forces painted a 1-inch yellow stripe down the center of the pavement in the same manner and with the same equipment used in the preliminary stages of placing traffic stripes. The excellent appearance of the finished pavement shows the value of this added precaution.

The contractor on this project was Southwest General Construction Company with general superintendence under A. Ray Smith. The engineering control was under the immediate supervision of Resident Engineers Joe C. Clark and W. Charles Lovil, of Marshall.

The cost of the project exclusive of the gravel shoulder work and patching which was done by State Forces, but including patching material secured from the contractor, and engineering and contingencies was approximately $24, 500 per mile.

Although it is too early to draw conclusions based on this job, our personal opinion is that there are many miles of concrete pavement throughout the state which need this same, or similar treatment●

Texas Highway Department
Form 483-B 1-49-40m

INTEROFFICE MEMORANDUM

Date August 9, 1950

TO: Mr. Fred Bennett

Responsible

FROM: John B. Nations

Desk JBN

SUBJECT: Paint Striping Machines

We have just purchased twenty-six (26) bead dispenser attachments for our Kelly-Creswell center-striping machines. As you know, we have been using a bead dispensing attachment furnished by the Prismo Company. Our agreement with this firm was that so long as we used their paint and beads they would furnish us dispensers. Since we will now use the Department's new formulated center-striping paint, it is necessary that we furnish our own dispensers.

We have made exhaustive tests on all bead dispensers available at the present time and it was found after several corrections the Meili-Blumberg dispenser would work perfectly with our present striping machines. This unit uses a new system of dispensing beads in that the beads are swirled out of the discharge opening thus giving a more even distribution of beads, and, also, the beads are driven part of the way into the paint and our bead loss is cut approximately 60%. You will recall that the present Prismo dispenser we are using is a gravity flow type unit.

As soon as these attachments are received we will ship one to each District. This will free us from the threat offered by several paint companies that unless we use their products they will not furnish us with bead dispensers. We are attaching two cuts labeled Exhibits "A" and "B" which will show the new attachment on a typical Kelly-Creswell striping machine such as we own.

While on the subject of striping machines, we are still experimenting with a unit at Camp Hubbard whereby we can achieve the same results we are getting at the present time from our present striping machines and at the same time increase the size of the paint container whereby it will not be necessary to refill so often. As you know, much time is lost in mixing and refilling the paint containers on our present striping machines. We have requested several Districts to give us their ideas on this problem.

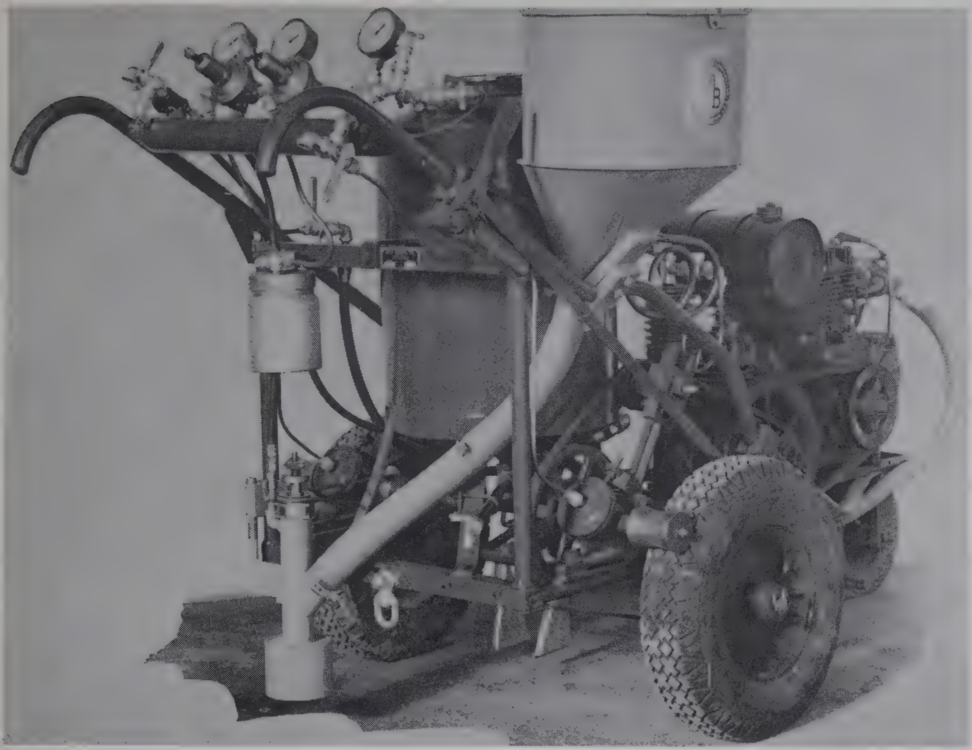
We are attaching cuts of a machine developed in another State which may or may not be the answer to our problem. We will shortly conduct experiments here in District No. 14 on this type of hook-up. The cuts of this machine are labeled Exhibits "C", "D", and "E". We are also attaching cuts of a machine from still another State which has some good features. We have labeled these cuts Exhibits "F" and "G". The only objection we can find to this machine is that it has limited visibility.

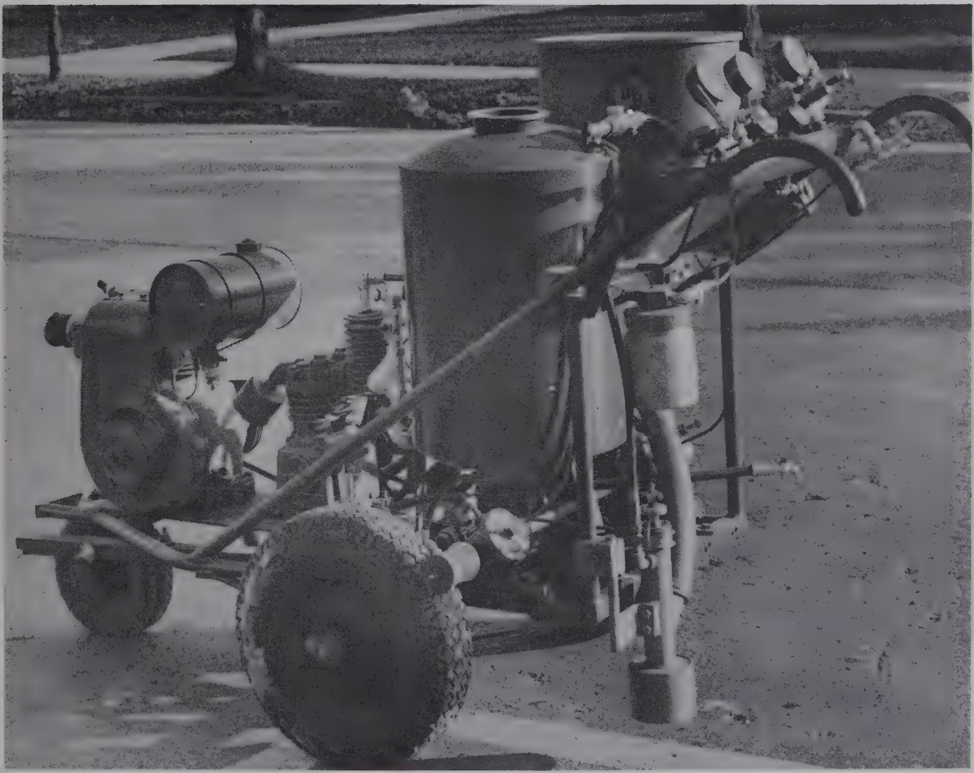
We are in hopes we can develop a striping machine at Camp Hubbard similar to this machine which will fit in the body of a pickup. The unit we propose to build will fit in any pickup body temporarily thereby not tying up a pickup at all times for the paint striping machine.

We will keep you posted on future developments.

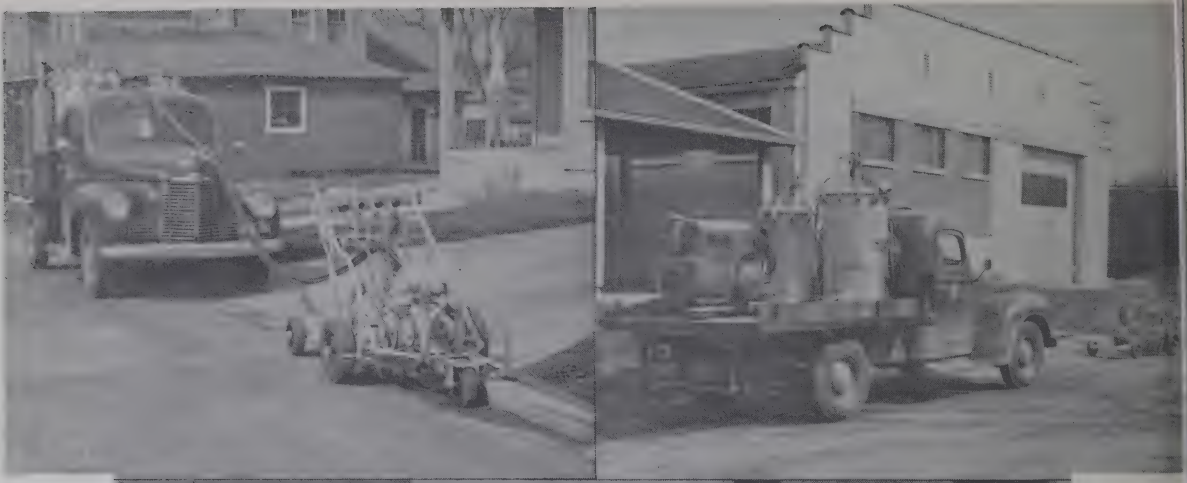
John B. Nations

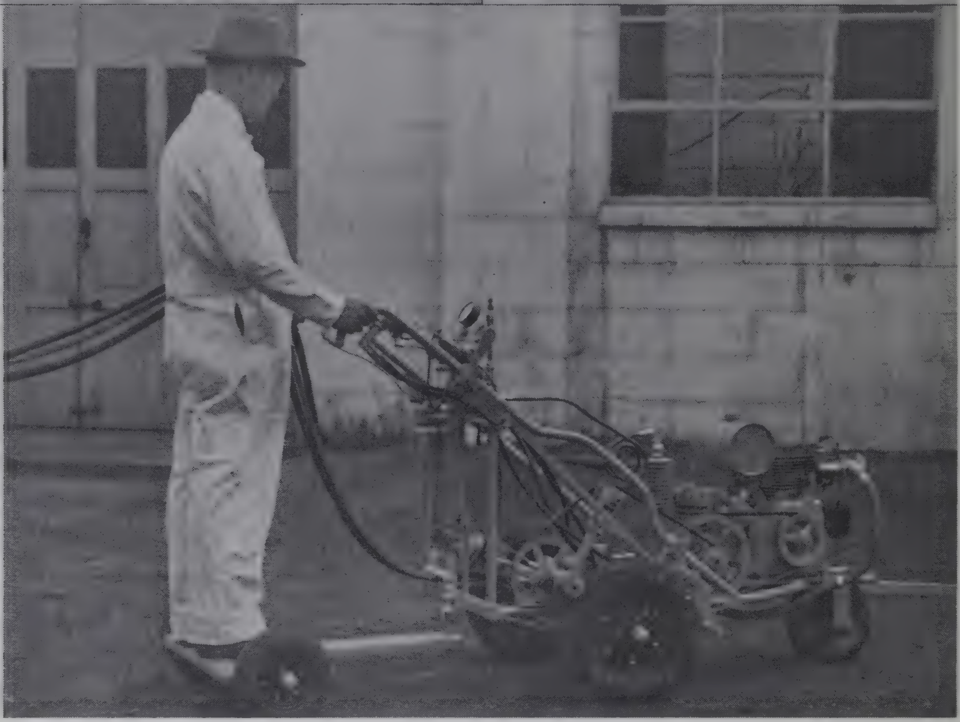
JBN:vp



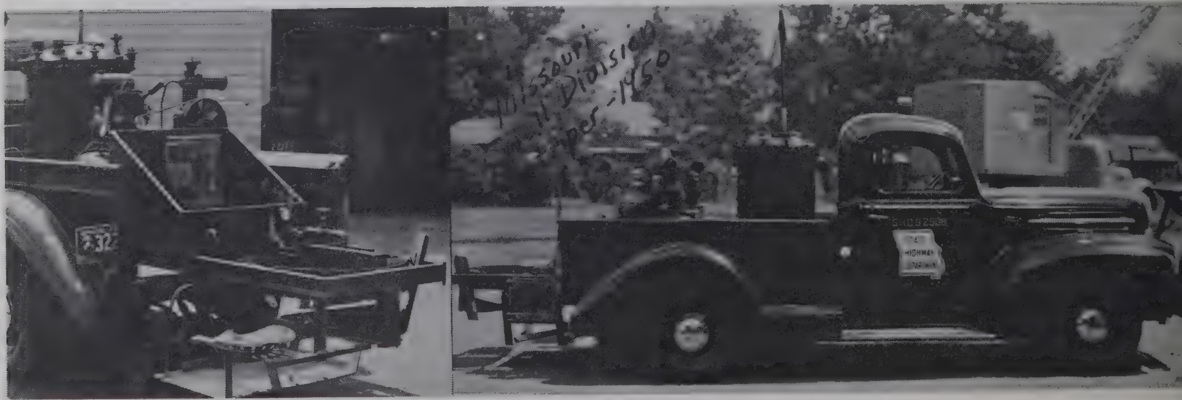


◆ New attachment on Kelly-Creswell striping machine.





◆ Machine developed in another state.



◆ . . and another.

ASSISTANCE BY THE HIGHWAY DEPARTMENT IN THE SOLUTION OF CITY TRAFFIC PROBLEMS

TRAFFIC SERVICES DIVISION

The Highway Department has received a number of requests from cities for assistance with their traffic problems, and those District Engineers from whose Districts the requests have come are, of course, familiar with the nature and type of the problems for which assistance has been requested. However, for the information of those District Engineers who have not received such requests and other Highway Department personnel who may not be familiar with this phase of the Department's activities, we feel that it might be worthwhile to describe briefly the help that has been given to the cities and the manner in which the surveys have been conducted.

When a request of this nature comes direct to the Austin Office, it is referred to the Division of Traffic Services for handling, and the first step is to advise those who made the request to have the city make an official request direct to the District Engineer in whose District the city is located. In some cases, however, the original requests have been made direct to the District Engineer and have been forwarded to the Austin Office by him.

After the official request has been received by the District Engineer, arrangements are made by the Division of Traffic Services through the District Engineer for a conference with representatives of the District Office and the City Officials to determine the nature and scope of the survey to be undertaken and the number and type of personnel that can be furnished by the District and the city. Since the Division of Traffic Services furnishes the supervisory personnel and prepares the report, the only other personnel needed are those necessary for making manual traffic volume counts at problem intersections and for assistance with parking surveys.

As a general rule, the Highway Department does not have the personnel to make a complete city-wide traffic survey, and the study is usually limited to an area not exceeding one block either side of the highway route. The survey may include a parking study of the central business district and an inventory of vacant lots within a radius of two or three blocks of the central business district that might be used for off-street parking; corner parking restrictions; bus loading zones; commercial loading zones;

pavement markings; inventory and study of existing traffic signals; inventory of signs; inventory of pavement widths face to face of curbs for highway routes and streets one block each side of highway routes; study of problem intersections; study of accident records; and feasibility of one-way and through streets.

Typical recommendations resulting from these surveys include:

1. Creation of a Traffic Commission to gain public support for city officials in the program of traffic improvements.

2. Assignment of traffic engineering functions to the office of the city engineer where such office exists and where there is no city traffic engineer.

3. Inauguration of a long range city street improvement program with priority given to those streets that can serve as through streets and provide local traffic with alternate routes which will relieve the congestion on the streets carrying highway routes.

4. Proper timing of traffic signals for progressive movement of traffic where design features of existing equipment will permit.

5. Replacement of non-standard signals with standard signals of such design that can be timed to facilitate traffic flow.

6. Replacement of non-standard traffic signs with AASHO standard designs.

7. Marking of cross walks and "stop" lines.

8. Marking of adequate corner parking restrictions.

9. Change from angle to parallel parking on streets of such width that angle parking interferes with the free movement of traffic.

10. Time limit values for curb parking spaces in accord with the customer demand for turnover of curb parking spaces.

11. Improvement of vacant lots within a reasonable walking distance of the central business district to provide off-street parking spaces where the number of curb spaces is inadequate to meet the parking demand.

12. Trimming of shrubs and removal of obstructions to improve sight distances at intersections.

13. Increase in radii of curb returns at certain intersections to facilitate turning movements of traffic.

14. Adequate trial of one-way streets in lieu of widening for certain narrow streets to improve traffic flow.

15. Use of accident record files to identify and plan improvements for high accident locations.

16. Modernization of the city traffic code in line with the Model Traffic Ordinances which are correlated with the Uniform Traffic Laws.

A casual study of the typical recommendations will show that these surveys are aimed at making better use of existing streets rather than improvements which involve major construction projects. Of course, the city street improvement program does involve capital expenditures, but most cities have a program of this type even though it might be on a limited scale. It should also be emphasized that surveys of this nature do not conflict with nor replace the Origin and Destination studies made by the Highway Planning Survey, which are primarily for the planning of new facilities and major improvement projects.

The number and extent of these surveys that can be undertaken by the Department is of course limited by personnel and regular Departmental assignments. We are not seeking to initiate an unlimited flood of requests for these surveys from cities, but when requested, we have tried especially to help the smaller cities who do not have engineering personnel, even though a rather long period of time may elapse between the receipt of the request and the time the survey can be undertaken.

Although traffic surveys of this type are not too expensive and the measures recommended do not involve the expenditures of a large amount of funds, we feel that they do have value in facilitating the flow of traffic through the smaller cities and in fostering a spirit of cooperation between the Department and the cities in the solution of traffic problems ●

HIGHWAY EMPLOYEES RECEIVING TWENTY-FIVE AND THIRTY YEAR AWARDS IN AUGUST

First row: Joe J. Davis, Fred Bennett, Magda P. Cuenod, Roy A. Brown, Fred A. Lee, and Ivy Smith, far right.
Second row: Pedro Barcenes, Anton Kutchka, L. C. Cooper, Erin Bradfield, W. H. Garrett, Malcolm M. Davis, H. F. Shields, and Sanford Webber.
Third row: Charley O. Huff, Benjamin F. Spinks, J. A. Waller, Ellen Linden, James V. Gilstrap, William H. Clements, and Hubert Snyder.
Fourth row: C. N. Stephenson, D. B. Halliburton, Byron Reese, Clyde Silvus, T. J. Kelly, F. L. Smith, J. D. Rice, A. R. Kelley, George Carver, and D. M. Puckett. Not pictured is Roy McClure.

TEXAS HIGHWAY DEPARTMENT

Abilene, Texas

REFER TO FILE NO.

June 29, 1950

Subject: Use of Tree Spray
District No 8

File D-3 P S B

In reply to your letter of June 5 asking us to submit pictures and report of our method of painting guard post with the use of a tree spray,we submit the following:

We discovered several years ago that by using the conventional tree spray and cutting the aluminum paint about 25% with white gasoline, this operation could be done on a much more economical basis than by the old method of using a paint brush. A three inch paint brush costs $10.80 whereas a tree spray costs about $4.85. One man can spray a post in about 15 seconds. There is one disadvantage in using the tree spray in West Texas. During high winds the operator must be very careful not to spray passing vehicles.

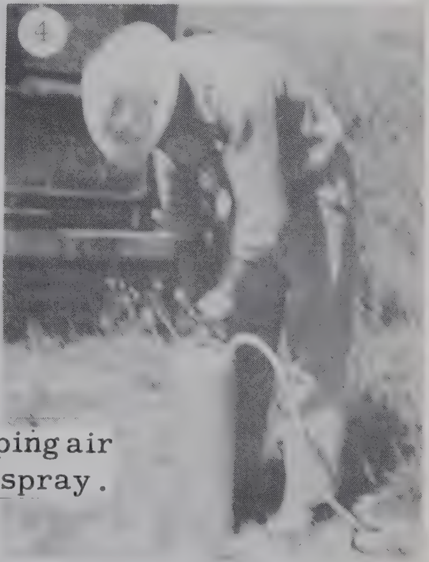
We aro enclosing several pictures of this operation. Pictures Nos 1, 2 and 3 show mixing the paint with gasoline. Pictures No. 4 shows pumping air into the spray. Pictures No 5 and 6 show pasting the 1" tape over the reflector button. Picture No 7 shows the actual spray in operation. Pictures No 8, 9 and 10 show placing of black stripe around the post and Picture No 11 shows the post after completion.

We trust this is the information you desire.

Sincerely yours,

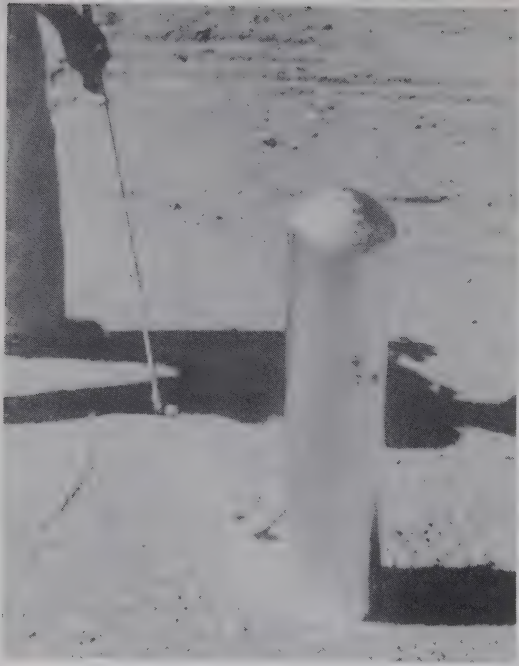
S. J. Treadaway
District Engineer

Mixing the paint with gasoline.

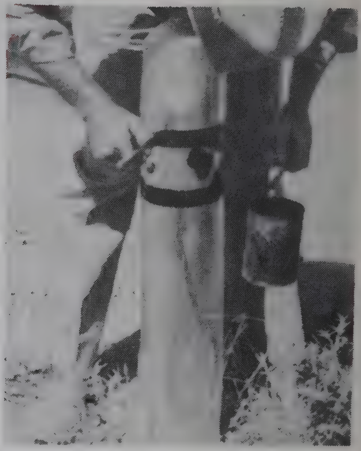


Pumping air into spray.

Pasting 1" tape over reflector button.



☚ (7) The actual spray in operation.



(8), (9), and (10) show the actual spray in operation.

(11) Posts after completion. ☞

COMMISSION
FRED A. WEMPLE, CHAIRMAN
A. F. MITCHELL
ROBT. J. POTTS

TEXAS HIGHWAY DEPARTMENT

STATE HIGHWAY ENGINEER
D. C. GREER

Austin, Texas
April 21, 1950

FILE NO. D-3

Mr. D. C. Greer
State Highway Engineer
Austin, Texas

Attention: Mr. Percy S. Bailey
Maintenance Engineer

Dear Sir:

Attached you will find two forms that we use in keeping up with our regular maintenance funds and the expenditures of the same, month by month. Our contingency fund amounts to $69,045.65, which fund is held in reserve and is not included in the figures shown on either of these sheets. Since these sheets are sent out to the Maintenance Foremen each month, we deemed it advisable to handle the contingency fund as above described. From the left-hand column, headed Foreman and County, you will note that we are attempting to keep the cost per mile for the Foremen in one case and the underruns and overruns in the other case. This arrangement is necessary first to allow for the fact that the Foremen, in some cases at least, are maintaining roads in two or more Counties, and it was our desire to attempt to arrive at a per mile cost to determine the efficiency of work being done. The second form was designed to show the Foremen and us at the District Office at a glance the status of overruns and underruns.

We have now completed the first half of this fiscal year and we actually stand, considering the total budget (including the contingency fund), with a total expenditure of $367,708.99 and with a reserve of 40.42 per cent to carry on maintenance for the next five months.

I have used these same forms in other Districts that I have been in and find them to be very helpful to the District Office as well as to the Maintenance Foremen. The average expenditure per mile per month for the whole District for maintenance work for these seven months, you will note on the proper form, is $44.29 per mile per month.

Yours very truly,

W D Dockery
W. D. Dockery
District Engineer
District Fourteen

WDD:dw

REGULAR MAINTENANCE COST PER MILE

MONTH OF MARCH - 1950

		Roadway Maintenance		Section Expense			
Foreman	Total Miles	Amount Authorized	Amount Spent	Amount Authorized	Amount Spent	Total Amount Auth. Per Mi.	Total Amount Spent Per Mi.
Brooks	159.538	4028.35	7186.95	557.50	538.77	28.74	48.43
Arrington	155.342	4122.36	5026.26	603.96	499.66	30.43	35.57
Baker	207.574	4679.59	12329.43	715.50	953.83	25.99	63.99
Davis	197.152	4853.54	5217.46	650.46	563.31	27.92	29.32
Simon	123.849	3162.50	3201.61	464.58	507.71	29.29	29.95
Crow	94.935	2655.50	3953.99	399.58	653.76	32.18	48.54
Wallendorf	122.591	4324.13	4609.50	436.67	739.76	38.83	43.64
Gibbs	128.589	4414.52	5535.49	408.83	442.71	37.51	46.49
Ford	88.017	3012.00	4198.18	408.83	426.04	38.87	52.54
Total	1277.587	35252.49	51258.87	4645.91	5325.55	31.23	44.29

Total Overrun Per Mile: 13.06

REGULAR MAINTENANCE CHARGES

MARCH - 1950

County	Labor	Material	Equipment Rental	Total Spent	Authorized	Underruns Overruns	Total Spent to Date	Authorized to Date	Underruns to Date Overruns
Bastrop	3076.30	2458.63	1308.95	6843.88	4109.11	2734.77	37932.72	28570.45	9362.27
Blanco	1417.59	1411.47	489.99	3319.05	1669.67	1649.38	15495.98	11687.69	3808.29
Burnet	1365.28	494.22	393.20	2252.70	2998.75	746.05	20718.85	20811.25	92.40
Caldwell	1721.00	529.84	671.88	2922.72	2800.50	122.22	22557.22	19603.50	2953.72
Gillespie	1788.31	888.75	524.55	3201.61	3162.50	39.11	24369.91	22137.50	2232.41
Hays	1931.42	1319.47	575.57	3826.46	3023.33	803.13	22500.81	21163.31	1337.50
Lee	1623.88	1312.23	961.11	3897.22	2630.50	1266.72	19169.57	18413.50	756.07
Llano	3341.30	4252.33	2547.80	10141.43	2194.17	7947.26	24815.84	15359.19	9456.65
Travis	2877.74	1000.94	1084.13	4962.81	4623.75	339.06	40592.88	31391.25	9201.63
Georgetown	2652.56	2016.93	866.00	5535.49	4270.25	1265.24	35788.27	29891.75	5896.52
Taylor	2053.51	1497.68	646.99	4198.18	3012.00	1186.18	23408.31	21084.00	2324.31
	23848.89	17182.49	10070.17	51101.55	34494.53	16607.02	287350.36	240113.39	47236.97

◆ Plant set up on Maintenance cold mix job on Mesa Road.

CUTBACK ASPHALTIC CONCRETE PAVEMENT (Limestone Rock Asphalt Admixture) USED FOR MAINTENANCE PATCHING IN DISTRICT 24

VICTOR SEARCY, *District Maintenance Engineer*

District 24 has been using a modified version of standard specification Item 311-Type Q for maintenance patching for the past several years. The district purchased two pugmills soon after the war and has been doing all the mixing of these materials at various places over the district. The practice has been to use a combination of two or three aggregates mixed with RO-3, the third aggregate usually being a fine sand. In general, the materials to be mixed have been purchased and placed on the ground prior to starting the mixing operations.

The materials used consist of the following:

1. Crushed Stone - meeting requirements of Item 303A
2. Sand - meeting the requirements of Item 403. 2 modified as follows:

Retained on 10" mesh-------0%
Retained on 40" mesh-30 to 40%
Retained on 80" mesh-60 to 90%

3. Rock Asphalt - 100% passing 1/4" screen and containing 5 to 9% bitumen. This is generally known as rock asphalt dust
4. Asphaltic Material - RO-3 meeting State Highway Department specification 9-45-846R

A typical combination of two

materials (assuming the fines in the stone are sufficient) is approximately as follows: 70.5% crushed stone; 25% rock asphalt dust; 4 1/2% RO-3.

A typical combination of three materials is approximately as follows: crushed stone - 68%; sand-12 1/2%; rock asphalt dust - 15%; RO-3 - 4 1/2%.

The above combinations have given very satisfactory materials. The material is easily worked and can be stored in stock piles for several months. It does have certain disadvantages: If the material is placed in a patch or to support edges of asphalt pavements and the entire pavement is sealed within twelve to eighteen months, sometimes these patches will bleed through the seal coat; also, the material cannot be placed very satisfactorily in thick lifts, but must be placed in thin lifts. If a thick patch is to be placed, we find it preferable to place a thin lift and then some weeks later, place another lift, until the patch has been brought to the desired grade.

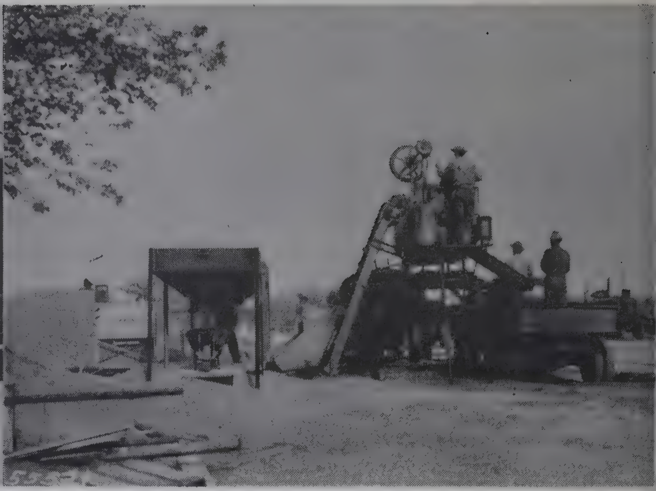
If, as sometimes happens, it is desired to have a material of much finer texture to permit very thin applications to the road, the rock asphalt dust may be added to stone screenings. Generally, the stone screenings all pass the 1/4" screen. We have kept the percentage of RO-3 at 4.5, even on this material. This fine graded material was mixed, stock piled six weeks and used on one rather large repair job in this district and to date, has given very satisfactory service. Soon after the material was placed on the road, a large pipe line construction project started close to this road and several thousand heavy loads passed over the area. To date no distortion or shoving is noticeable and the material in place on the road resembles a Type D Hot Mix.

It should be pointed out we have used the foregoing materials in some of the most arid regions of Texas. In some of the mountain areas, rainfall is more plentiful, but to date, we have been unable to tell that the added

◆ Asphaltic Concrete Mixer set up in District Yard, El Paso.

◆ Plant set up on Mesa Road.

◆Plant set up on Mesa Road. (Type Q Mix)



◆Pre-mixed material being processed. Note stockpiles at left, transfer hoppers, mixer and oil truck, and truck which hauls the material away.

moisture in the mountains has had any detrimental effect on this mixture. The coarser material has been used to straighten up and widen asphalt pavements, the edges of which have begun to break up or become brittle. It would probably be desirable to seal these materials within two or three years.

The equipment used in this operation consists of the following:

2 single compartment batch bins (1 for stone and 1 for sand and rock asphalt, previously combined as desired)
2 batch scales (Placed directly under bins)
2 four cubic foot wheelbarrows
1 pugmill mixer (1250 pound batch)(14 C. F. Mixer)
1 one-half cubic yard front end loader on International wheel tractor
1 asphalt storage tank
1 tank car heater (For large storage tanks)
1 or 2 dump trucks (if stored near site)

Average 12 to 15 tons per hour

Average personnel: 7

The operation consisted essentially of setting up the bins close to the mixer. The bins were built in the district shop. The bins are charged with the one-half yard front end loader and the batch weighed out from underneath the bin into the wheelbarrows. The material is mixed in the mixer and dumped directly from the mixer into a haul truck. We have found it advantageous to place the mixer on a high platform or on truck trailer so that the batch can be dumped into the truck●

COMMISSION

FRED A. WEMPLE, CHAIRMAN
A. F. MITCHELL
ROBT. J. POTTS

TEXAS HIGHWAY DEPARTMENT

STATE HIGHWAY ENGINEER
D. C. GREER

Amarillo, Texas
June 14, 1950

FILE NO.
D-4

Equipment 5079
Rotary Drilling Rig

Mr. D. C. Greer, State Highway Engineer
Texas Highway Department
Austin 26, Texas

Attention: Mr. John Nations

Dear Sir:

As per your request to Mr. Smith of this office, we are forwarding herewith, a short report on the use of the Jaques Rotary Drilling Rig, purchased for this district on November 1, 1949.

We trust that this report will serve the purpose intended. We shall forward pictures to you at the earliest possible date.

Very truly yours,

James G. Lott

James G. Lott
District Engineer

CWS:eb
attach.

REPORT ON TRUCK MOUNTED ROTARY DRILLING RIG PURCHASED FOR DISTRICT 4

Equipment and Procurement Division

GENERAL: On November 1, 1949, District 4 received a two ton all wheel drive, heavy duty Chevrolet truck, equipped with an oil field type truck bed of conventional design. The truck was Model 6403 with a Coleman front end drive and mounted on the truck was a Jaques, Model K, Hole digger or rotary drilling rig. There were three bits for earth boring furnished. The sizes were 8 inches, 18 inches, and 24 inches. The total purchase price was $7, 600 complete. The earth boring machine was equipped with a twenty foot shaft.

The attached illustrations show the equipment in working position and in driving position with the shaft laying down over the truck cab.

Prior to purchase of this equipment, we were somewhat in doubt as to whether or not we would have sufficient use for it to make the purchase economical to the Department. We have now had this machine for seven months and it has been busy almost every day since purchase.

USES: The primary purpose for which this equipment was purchased was to speed up our investigations for base material and this has been its primary use since purchase. We have had occasion to make investigations of several possible gravel sources and this machine is ideally suited to this purpose. As many as fifteen holes, twenty-four inches in diameter and twenty feet deep, can be dug in one day, and a thorough investigation of a possible pit source made in a short time.

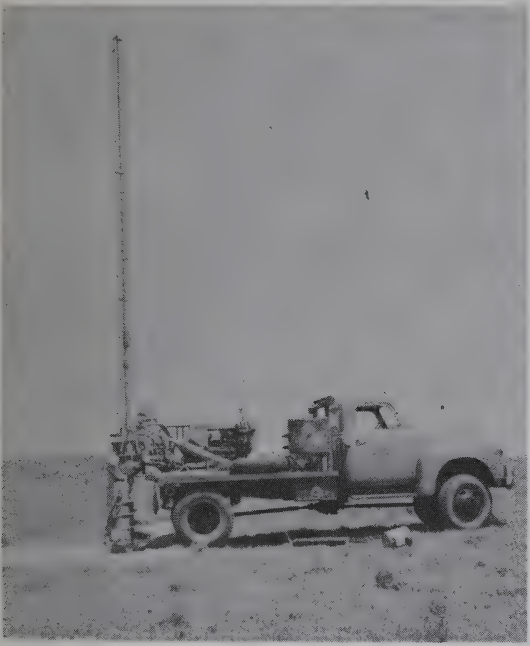
Since most of the base material in the Panhandle is caliche and rock, we have been experimenting with the use of this auger, for investigations of possible caliche sources. We have found that by the use of a paving breaker for the hard formations and with the occasional use of dynamite, we can complete a test hole in about one-half the time required for the old method of hand digging. The earth boring machine is used to clean out the hole after the hard formations have been broken up.

A twenty-four inch rock bit for use with this equipment was constructed in our district shop, but we find it has not been entirely satisfactory. We hope to improve on this bit, but it appears doubtful that the Ford V-8 motor which powers the drilling rig, will be sufficient to make the use of this bit feasible.

In addition to the above, we

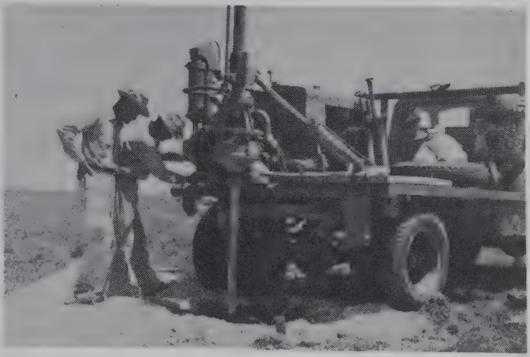
have used this rig for digging holes for tree planting and find that it is ideally suited for this purpose. We recently planted 200 Chinese elm trees between Hereford and Vega on State Highway 51, and this machine dug the 200, twenty-four inch holes in three days. We have also used the eight inch bit in digging post holes for fence construction at warehouse sites.

CONCLUSION: While the initial cost of this type equipment is rather high, we are convinced that its use over a period of years, will be economical to the Department. This is due, in our opinion, to a reduction in the time to make material investigations and a reduction in the amount of labor involved in making such investigations ●

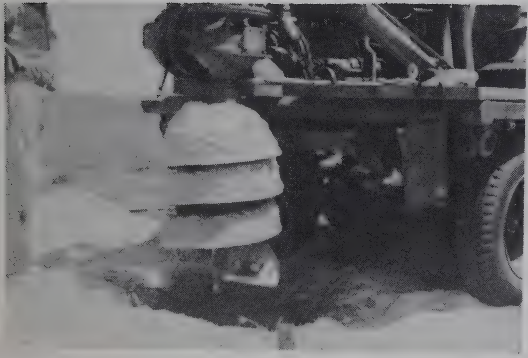


◆Machine in working position.

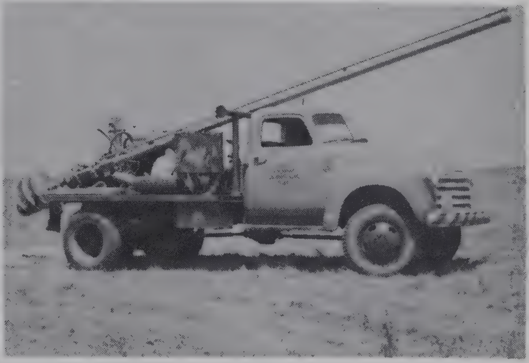
◆Bit and mast in working position.



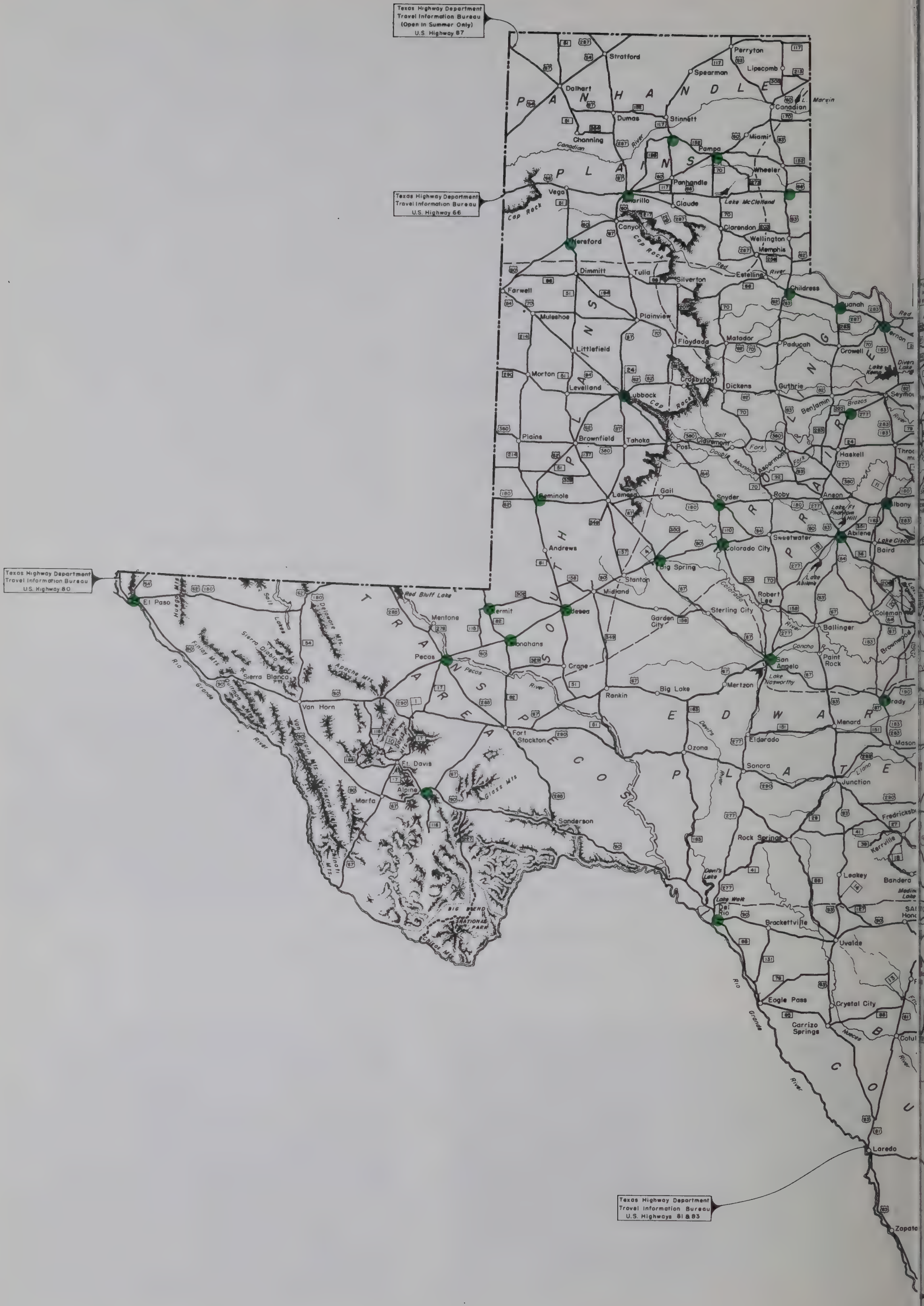
◆Starting a test hole.



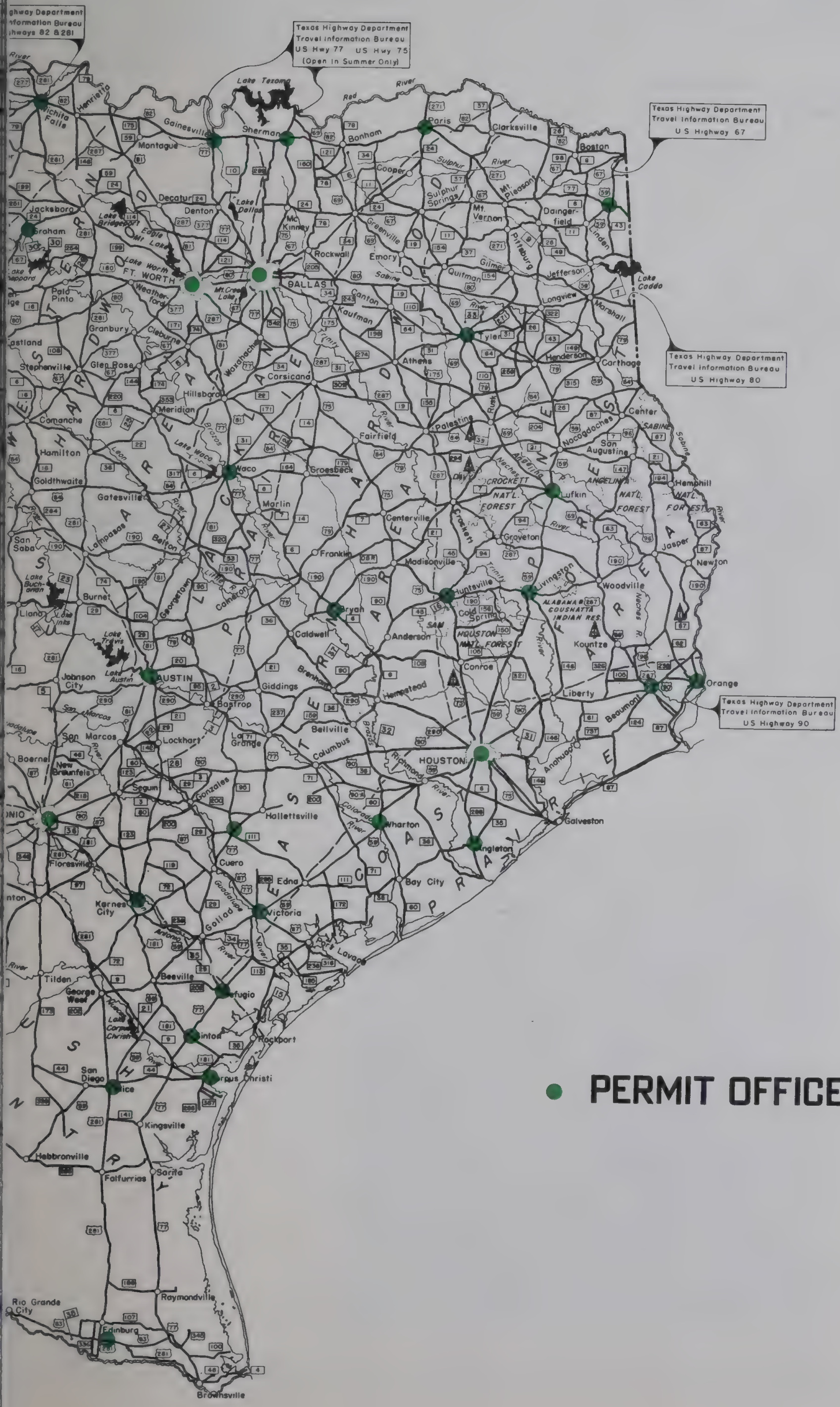
◆Close up of a twenty-four inch bit.



◆Machine in traveling position.



Texas Highway Department Travel Information Bureau (Open in Summer Only) U.S. Highway 87
Texas Highway Department Travel Information Bureau U.S. Highway 66
Texas Highway Department Travel Information Bureau U.S. Highway 80
Texas Highway Department Travel Information Bureau U.S. Highways 81 & 83
PANHANDLE PLAINS
SOUTH PLAINS
ROLLING PRAIRIE
TRANS PECOS AREA
EDWARDS PLATEAU
Stratford
Perryton
Spearman
Lipscomb
Dalhart
Canadian
L. Marvin
Dumas
Stinnett
Channing
Canadian River
Miami
Pampa
Wheeler
Panhandle
Vega
Amarillo
Claude
Lake McClellan
Cap Rock
Canyon
Clarendon
Hereford
Wellington
Memphis
Red River
Dimmitt
Tulia
Silverton
Estelline
Childress
Farwell
Quanah
Vernon
Muleshoe
Plainview
Floydada
Matador
Paducah
Crowell
Littlefield
Lake Kemp
Diversion Lake
Morton
Crosbyton
Dickens
Guthrie
Seymour
Levelland
Lubbock
Benjamin
Brazos River
Plains
Brownfield
Tahoka
Post
Clairemont
Salt Fork
Double Mountain Fork
Aspermont
Haskell
Throckmorton
Seminole
Lamesa
Gail
Snyder
Roby
Anson
Albany
Lake Ft. Phantom Hill
Andrews
Big Spring
Colorado City
Sweetwater
Abilene
Lake Cisco
Baird
Stanton
Midland
Robert Lee
Lake Abilene
Coleman
El Paso
Hueco Mts
Salt Lakes
Red Bluff Lake
Delaware Mts
Mentone
Kermit
Odessa
Garden City
Sterling City
Colorado River
Ballinger
Sierra Diablo
Finlay Mts
Sierra Blanca
Apache Mts
Pecos
Monahans
Pecos River
Crane
Concho
San Angelo
Paint Rock
Lake Nasworthy
Brownwood
Rio Grande River
Van Horn
Rankin
Big Lake
Mertzon
Brady
Fort Stockton
Devil's River
Eldorado
Menard
Mason
Ozona
Ft. Davis
Van Horn Mts
Sierra Vieja
Glass Mts
Sonora
Junction
Llano
Alpine
Marfa
Chinati Mts
Sanderson
Fredericksburg
Rock Springs
Kerrville
Leakey
Bandera
Medina Lake
Devil's Lake
Lake Walk
Del Rio
Brackettville
Hondo
Big Bend National Park
Chisos Mts
Uvalde
Eagle Pass
Crystal City
Carrizo Springs
Nueces River
Cotulla
Rio Grande River
Laredo
Zapata



● PERMIT OFFICE

TEXAS HIGHWAY DEPARTMENT

El Paso, Texas
August 3, 1950

REFER TO FILE NO. D-16

Mr. D. C. Greer
State Highway Engineer
Austin, Texas

Attention: Mr. Fred T. Bennett

Dear Sir:

Attached you will find some pictures of the latest design in arbor building for roadside parks or turnouts. Comments from tourists have been favorable for this design. We favor this for several reasons, particularly the cost. It takes about one-half the material for this type as for a 4-legged type, also one-half the labor cost.

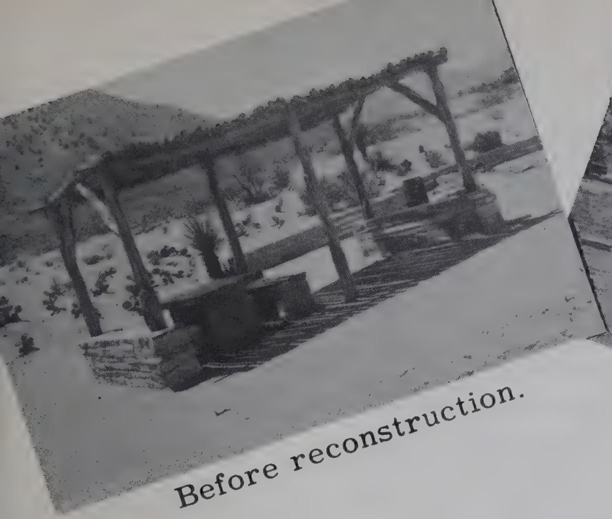
The pillars are 6-1/2' high, 3' x 1-1/2'. Two discarded grader blades were used in each pillar, running from the bottom of the foundation through the pillar. The top frame is 3" I Beam welded to the grader blades in the post, covered with discarded guard wire. The top is then covered with Reed Grass, a grass similar to Bamboo, and a native of this area. This type of grass is difficult to set fire to. The arbors are 20 ' long by 12' wide.

Yours very truly

E. W. Mars
District Engineer

By: O. F. Garrett
O. F. Garrett
Special Foreman

OFG/hj
Attach.



Before reconstruction.

After reconstruction.

◆Roadside Park Shelter eight miles west of Sierra Blanca on U. S. 80.

◆New roadside turnout eight miles east of Tornillo on U. S. 80.

◆Roadside turnout eleven miles east of Sierra Blanca on U. S. 80.

CUMULATIVE TOTAL OF CENTER STRIPE WORK

DISTRICT NUMBER	PAINT STRIPE	ASPHALT STRIPE	TOTAL COST	GALLONS OF PAINT USED PER MILE	PAINT STRIPE TOTAL MILEAGE
1	8,863.61	10,110.09	18,973.70	16.20	115.10
2	17,456.44	20,141.72	37,598.16	17.67	164.16
3	9,265.24	6,415.59	15,680.83	18.13	77.22
4	10,690.41	18,764.11	29,454.52	15.80	108.10
5	6,972.44	14,330.90	21,303.34	27.66	47.97
6	10,800.01	32,336.88	43,136.89	19.82	52.26
7	7,638.39	5,258.12	12,896.51	17.30	78.80
8	10,273.90	18,656.01	28,929.91	14.90	78.91
9	11,066.44	5,662.01	16,728.45	15.38	92.24
10	10,920.71	9,378.42	20,299.13	20.48	130.14
11	5,989.42	7,309.50	13,298.92	16.59	61.18
12	5,376.81	19,687.53	25,064.34	20.29	39.44
13	9,922.19	6,508.17	16,430.36	20.45	70.04
14	20,584.98	2,755.54	23,340.52	16.80	221.98
15	10,395.87	12,140.18	22,536.05	13.27	112.61
16	9,344.12	8,732.27	18,076.39	23.81	51.86
17	6,568.24	1,775.86	8,344.10	15.00	63.85
18	11,650.21	27,598.62	39,248.83	16.30	142.43
19	15,756.63	3,094.94	18,851.57	16.64	174.24
20	12,896.05	16,779.67	29,675.72	13.33	134.60
21	5,603.21	18.389.37	23,992.58	19.00	41.08
22	15,450.39	3,099.40	18,549.79	19.45	126.25
23	8,437.00	8,897.85	17,334.85	20.32	91.27
24	2,095.16		2,095.16	20.50	15.00
25	5,707.63	13,452.85	19,160.48	17.50	54.47
	249,725.50	291,275.60	541,001.10		2,345.20

Center Stripe work in District 16, 19, and 25 have been completed.

PERFORMED BY DISTRICT AS OF AUGUST 1, 1950

ASPHALT STRIPE TOTAL MILEAGE	TOTAL MILEAGE	PAINT STRIPE AVERAGE COST PER MILE	ASPHALT STRIPE AVERAGE COST PER MILE
251.40	366.50	77.01	40.22
350.88	515.04	106.33	57.40
142.90	220.12	119.98	44.90
400.50	508.60	98.98	46.85
326.50	374.47	145.35	43.89
313.16	365.42	206.66	103.26
143.22	222.02	96.95	36.71
330.00	408.91	130.20	56.53
136.76	229.00	119.97	41.40
241.44	371.58	83.91	38.84
173.31	234.49	97.90	42.17
383.09	422.53	136.33	51.39
109.92	179.96	141.66	59.21
70.66	292.64	92.73	38.99
178.38	290.99	92.32	68.06
111.09	162.95	180.17	78.61
35.00	98.85	102.87	50.74
523.79	666.22	81.78	52.69
73.70	247.94	90.43	41.99
297.50	432.10	95.81	56.40
568.09	609.17	136.40	32.37
55.70	181.95	122.38	55.65
209.88	301.15	92.44	42.40
	15.00	139.68	
363.94	418.41	104.78	36.96
5,790.81	8,136.01	106.48	50.30

No work performed in District 24 for month of July.

COMMISSION
FRED A. WEMPLE, CHAIRMAN
A. F. MITCHELL
ROBT. J. POTTS

TEXAS HIGHWAY DEPARTMENT

STATE HIGHWAY ENGINEER
D. C. GREER

Yoakum, Texas

July 26, 1950

FILE NO.
D-3

Mr. D. C. Greer
State Highway Engineer
Austin, Texas

Dear Sir:

Enclosed are four kodak pictures of the drilling machine which we are using for drilling mudjack holes in concrete pavement. You wrote us some time ago asking for these pictures.

This drilling machine consists of a Model A Farmall tractor, on the back end of which we mounted two vertical steel frames for holding pneumatic hammers, an air tank, and a cylinder and piston in the top of each vertical frame for lifting the jack hammers in the frames. This machine not only drills faster than a hand operated drill, but is much easier on the operator.

This machine was copied from, and is very similar to one which Mr. Sladczyk, Equipment Supervisor, and I saw some contractor using near San Antonio several years ago.

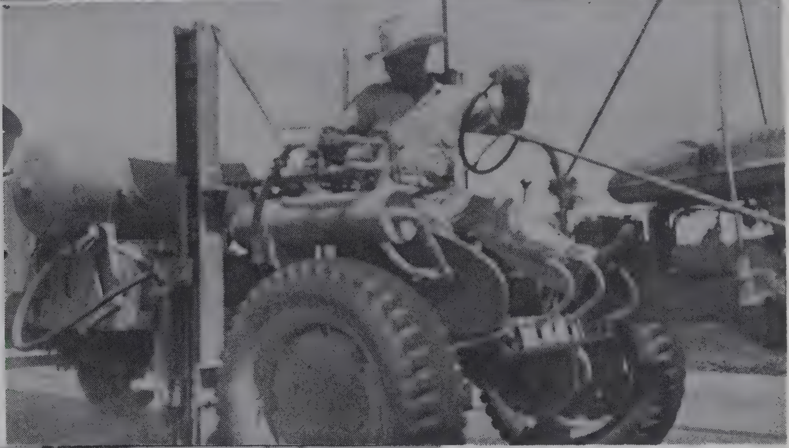
There is one little labor saving device on the machine that does not show on the picture, but is worth mentioning. A drill chuck is welded to the frame over the tongue of the compressor. This is used as a holder for changing drill bits.

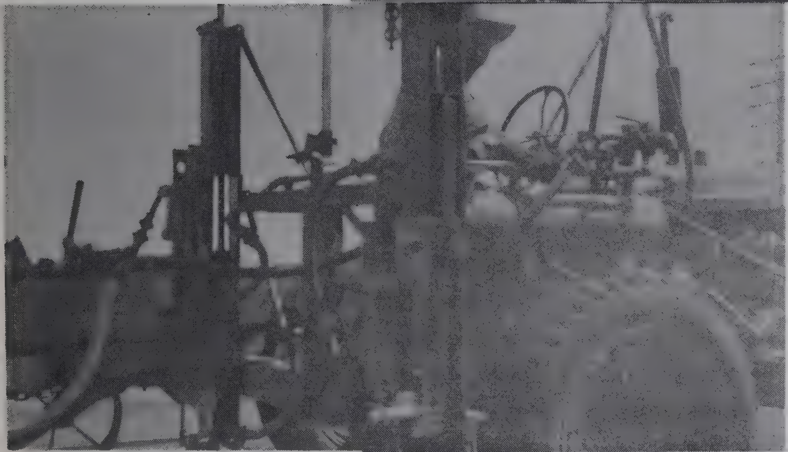
Very truly yours

M. G. Cornelius
District Engineer

By: Zay Johnson
Zay Johnson
District Maint. Engineer

ZJ:la





METHOD OF RELIEVING THE LOAD ON CRACKED END GIRDERS IN USE BY DISTRICT 20

MILTON HAYES, *District Maintenance Superintendent*

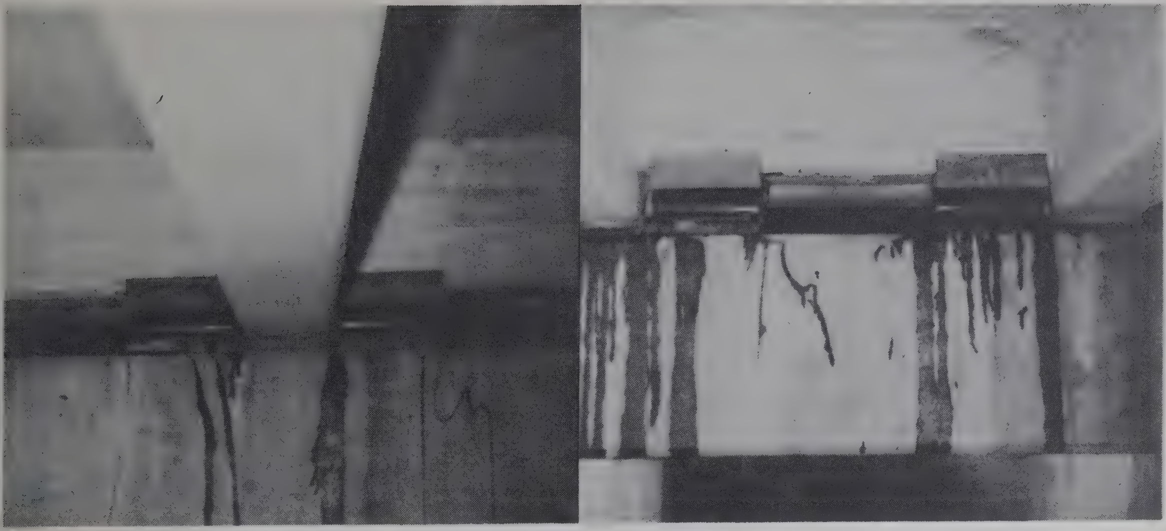
The photographs and sketches on the following pages show an expansion device which is being used in District 20 to relieve the load on cracked ends of girders.

The first structure to give trouble was the bridge over the East Fork of San Jacinto River on U. S. Highway 59 in Liberty County. This is a concrete girder type structure consisting of forty-six 35 foot G-12-26 spans. Due to the expansion, or load, or combination of both, the expansion end of the girders crack from the lower edge of the diaphragm to a point within or just inside the top portion of the shoe. If all of the girders in any one span were to crack, the span would then drop down and be supported by the diaphragm resting upon the bent cap with a resultant 8 inch vertical drop in the riding surface.

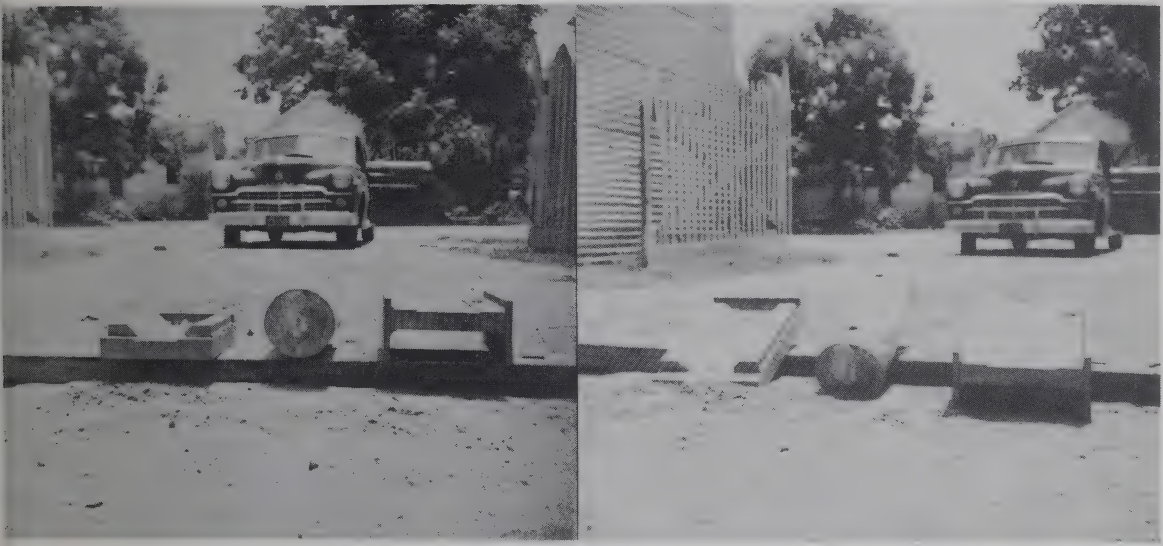
Since there was only 9 inches of space between the cap and diaphragm and the weight to be lifted was approximately 30, 000 pounds, fifteen 2 ton capacity hydraulic jacks, 8 inches in height, were purchased for use in raising one end of the span. Two units are placed between each two girders, or where there are four girders, six units are used. A piece of sheet lead is placed between the diaphragm and top part of the unit so as to uniformly distribute the load on all units. In releasing the jacks, one man operates them, releasing each jack a little at a time until the jacks are clear. This method prevents blowing out the hydraulic fluid.

The units cost $72 each f. o. b. Beaumont, Texas, and labor and equipment costs raise the total cost of the unit in place to $100.

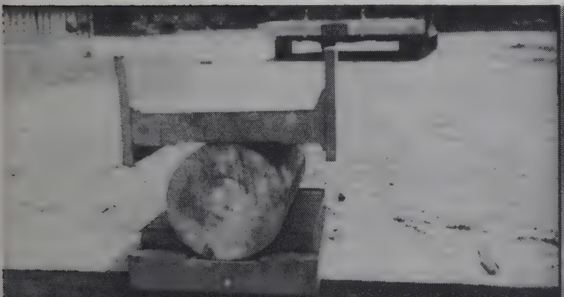
The first units were installed about one year ago and no furthur cracking has occurred on the spans on which these units were placed●



◆ Expansion devices in place.

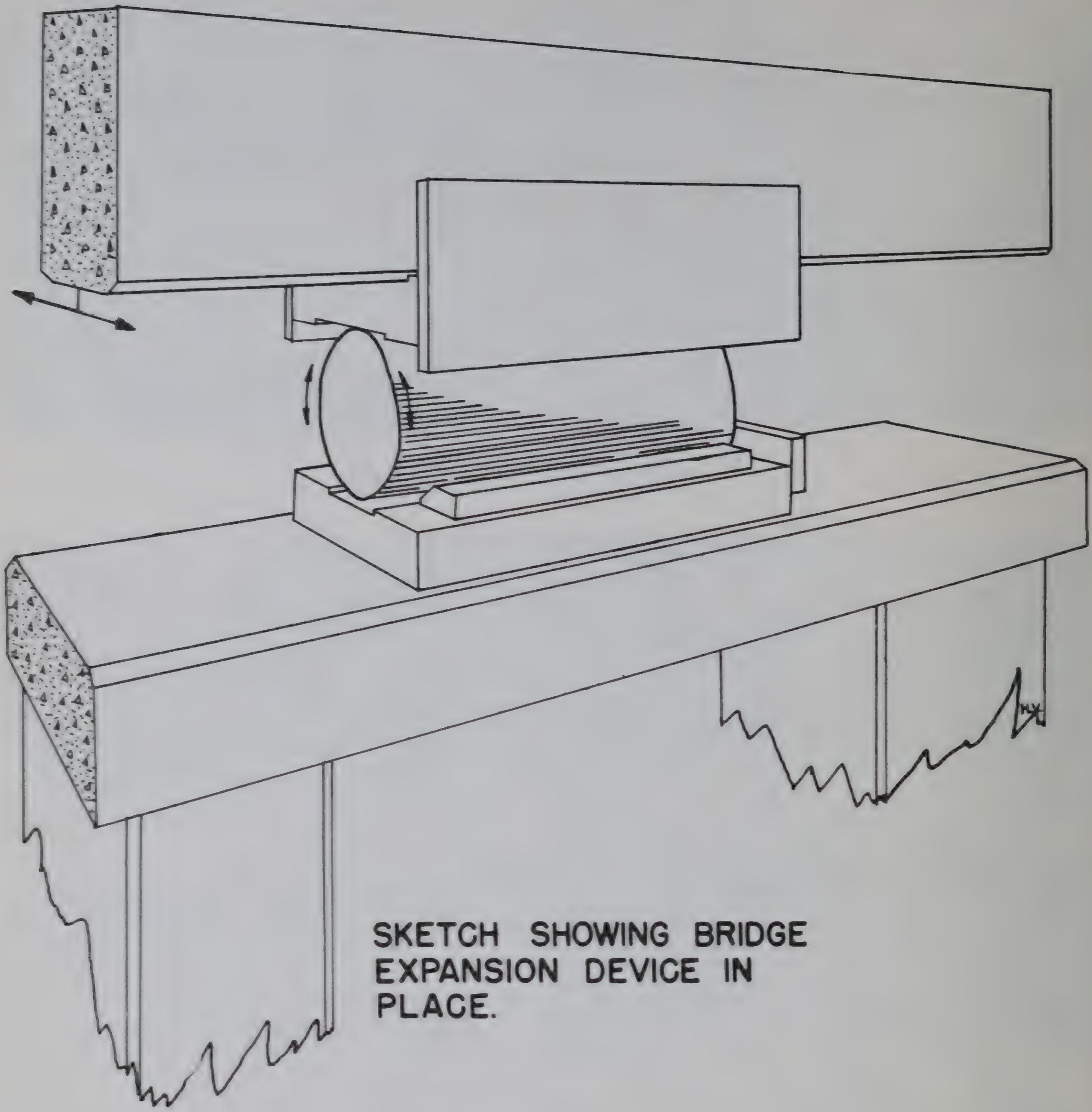


◆ Details and assembly of expansion device.



◆ Details and assembly
of expansion device.

◆ Installation of jacks
for lifting end of span.



SKETCH SHOWING BRIDGE EXPANSION DEVICE IN PLACE.

Mr. M. B. Hodges has reminded us that we failed to give credit to Mr. Zay Johnson, District Maintenance Engineer, and Mr. T. A. Tschiedel, Sign Painter, for designing and constructing the bridge end markers referred to in Mr. J. L. Russell's letter published in the July edition of the Construction and Maintenance Bulletin.

TRAFFIC PAINT

The following letter is in reply to a request from the Traffic Services Division for information on traffic paint used in the Pennsylvania Highway Department.

As you probably know, the Highway Department has recently received bids and placed an order for 16,000 gallons of yellow traffic paint which we propose to use in our future striping program.

The specification for this paint was formulated by the paint section of the Materials and Tests Division following a very comprehensive study of traffic paint specifications used throughout the United States. A state using similar specification to the one we have formulated is the State of Pennsylvania, from which the following letter is reproduced for your information.

You will note that they have purchased their paint at a cost of $1.21 per gallon and beads at 13 cents per pound. Bids received on our paint was $1.85 per gallon and beads approximately 12 cents per pound. No doubt this price will be reduced after a few such bids are received.

Even at this price a 30 per cent saving is made in our paint cost over the paint we have previously been using. There is a further advantage in using a specification paint in that any or all paint companies are eligible to bid on the material, which creates wide competition, a feature we have not enjoyed in the past.

➡

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HIGHWAYS
HARRISBURG

IN REPLY REFER TO

July 28, 1950

Mr. Fred T. Bennett
Engineer, Traffic Services
Texas Highway Department
Austin 26, Texas

Dear Mr. Bennett:

In reply to your letter dated July 10, 1950, in which you had requested information concerning the Department's Traffic Paint Specifications, wish to reply as follows:

I am attaching copies of the Department's Specification for the Binder and the Glass Beads also replies to each of the questions contained in the second paragraph of your letter.

(1) This specification paint has now been under field service tests approximately two (2) years on a heavily traveled highway having a traffic count of fifteen-thousand (15,000) vehicles per day of which approximately twenty-five (25%) percent is truck traffic.

At the present time this paint is still showing good durability, color retention and good day and night visibility.

(2) This paint has satisfactorily been applied with the Kelly-Creswell, Standard Model, B-3, Traffic painting machine, which carries a DeVilbis WV-593 type spray gun. The Department's truck mounted traffic painting machines carry DeVilbis WV-598 type spray guns, which naturally have a larger volume of air per minute. This Department has always used the above safety factor to insure proper ease of application.

The rate of application is three (3) hundred feet of solid 4" line per gallon of paint.

(3) No thinners are permitted or needed at various temperatures.

(4) Bead retention qualities for beads applied on the paint surface are excellent.

(5) Paint has been purchased under two contracts, the first being $1.21 per gallon and the second at $1.30 per gallon.

Glass beads were purchased at bid price of $0.13 cents per pound for the first contract and $0.124 cents per pound for the second contract.

At an application rate of six (6) pounds of glass beads per gallon of paint, the cost of the paint plus beads was $1.99 and $2.04 respectively.

(6) After four (4) years of extensive research and field service tests, during which time the many variables in proper formulation and field results have been studied, this is the first year of purchasing paint under this specification.

Very truly yours,

W. H. Herman
Chief Research Engineer

COMMISSION
FRED A. WEMPLE, CHAIRMAN
A. F. MITCHELL
ROBT. J. POTTS

TEXAS HIGHWAY DEPARTMENT

STATE HIGHWAY ENGINEER
D. C. GREER

Brownwood, Texas
June 16, 1950

FILE NO. D-3

File D-3
District No. 23
Subject: Asphalt, Grass and Weed Mulching and Erosion Control

Mr. D. C. Greer
State Highway Engineer
Austin, Texas

Dear Sir:

With reference to your letter of June 5, D-3, PSB, we are enclosing a brief report covering the subject of Asphalt, Grass and Weed Mulching and Erosion Control and also several photographs of this type of work made in this district.

In this connection, we wish further to add that this will help eliminate fire hazards on the right-of-way by keeping the grass and other waste materials raked, as numerous fires are started by cigars, cigarettes and bottles thrown from cars. At certain angles the reflection of the sun's rays on glass causes it to be heated and starts fires on the right-of-way.

We believe that this type of mulching can be done economically and will also help the appearance of our highways.

Very truly yours,

Leo Ehlinger
District Engineer

By: C. A. Bradshaw
C. A. Bradshaw
Maintenance Superintendent

CAB/eb
encls.

SODDING BY MEANS OF ASPHALT AND GRASS MULCHING

C. A. Bradshaw, *Maintenance Superintendent* and
Ben J. Lednicky, *Senior Landscape Advisor*

In East Texas whenever mulching or sodding is mentioned everyone thinks of Bermuda grass only, but in West Texas mulching or sodding has an entirely different meaning. In West Texas we cannot afford to be so choicy and specify Bermuda grass as that grass does not extend past Brown, McCulloch, and Mason Counties; roughly along the 25 inch rainfall belt. Beyond this point we should use the term "vegetative cover" in lieu of mulching or sodding. In West Texas a good stand of Johnson grass, broom weed, purple thistle, clover, oats, native grasses, or what-have-you, looks good on a back slope, because that is the first step to a successful solution of a sodding problem. Once a vegetative cover has been established it perpetuates itself by annually dying down and affording protection and anchorage for seeds for the coming year.

Thoughts similar to these gave rise to finding a satisfactory and economical method of sodding. Having analyzed the requirements for the germination of seeds the problem simplified itself immensely. A seed must have three requirements to germinate, 1) anchorage, 2) warmth, and 3) moisture. Much thought and discussion was given to finding an answer to make sodding economically practical where Bermuda grass was not available. Over a period of several years both asphalt and grass mulching have been resolved to the point where they are practical, economical, and will provide the desired results.

ASPHALT MULCHING

Asphalt mulching reduced to its barest essential is nothing more than "nailing" a seed to the soil (containing optium moisture) with asphalt. The asphalt anchors the seed and provides heat. As soon as the volatiles evaporate the asphalt cracks, allowing the fresh seedlings to peep through. Using this method, seeds are usually introduced by broadcasting them.

GRASS MULCHING

Grass mulching is the placing of grass clippings on an area. Within a short time these clippings melt down and hug the slope. By spraying 0.1 gallon of asphalt over these clippings keeps them intact and allows all moisture that falls to reach the ground. One very important point should be brought out here. Many times we hear of "sterile soils" that will not grow vegetation. What is meant is that the bacteria action has been destroyed by destroying all vegetation. This grass mulching provides shade, moisture, and warmth thereby creating a favorable place for bacteria to multiply, this in turn activates the soil with the result that the "poorest" (denoting quality of soil) slopes are usually covered with a vegetative growth in one year. In this type of sodding no seeding is necessary as the seeds are in the seed heads of the plants.

CONCLUSION

District 23 has tried both methods of sodding and both have proved very satisfactory--really it is only a "fielders choice" as to which method is selected--usually the deciding factor being the availability of grass clippings. This district has used the grass clipping method almost exclusively -- mostly because it is the simpler and cleaner way of doing the job.

* * *

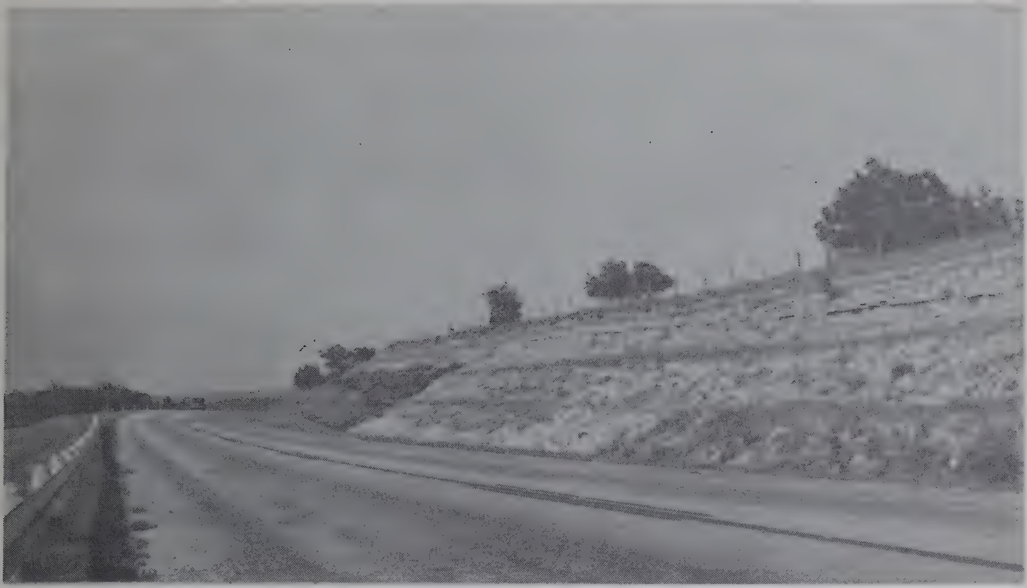
NOTE: *A comprehensive discussion of details is given in two papers published by the Traffic Services Division on both methods entitled*:

MULCHING ROADSIDE SLOPES—4-48-1182
Rudolph Riefkogel

REPORT ON ASPHALT MULCH SEED—6-48-1782
James E. Pittman

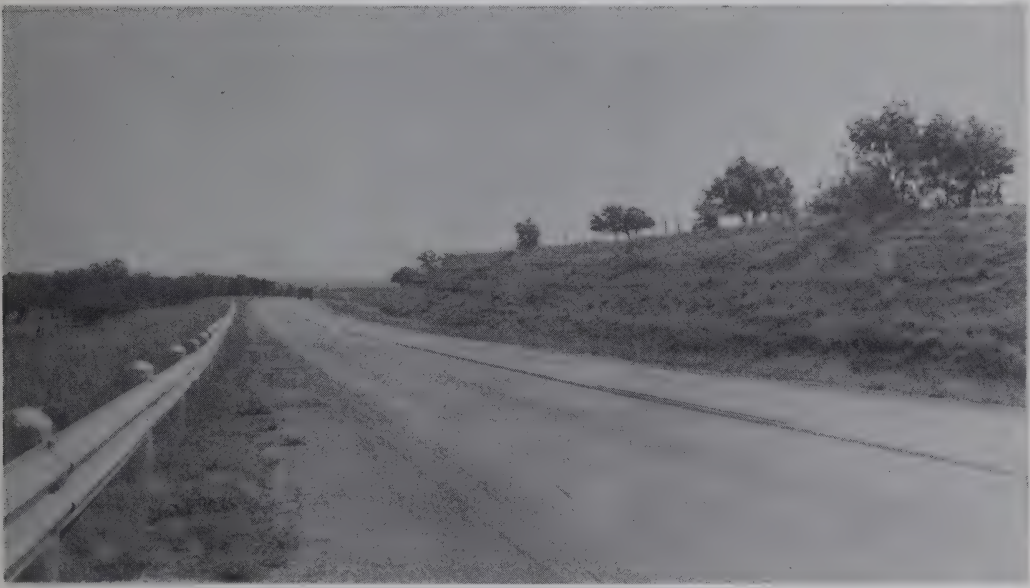
General view of slopes north of Lampasas on US Highway 190. Labor, material, and equipment rental for 1, 564 square yards cost $140 -- 9 cents per square yard in place. Cost was a little high because of long haul on grass clippings. August 10, 1948.

Close up view of east slope. Grass clippings placed loose and allowed to settle naturally. Asphalt is used to tie clippings to slope to prevent blowing. It is more desirable to apply a light coating of asphalt, 0. 1 gallon, over entire mulched area. August 10, 1948.



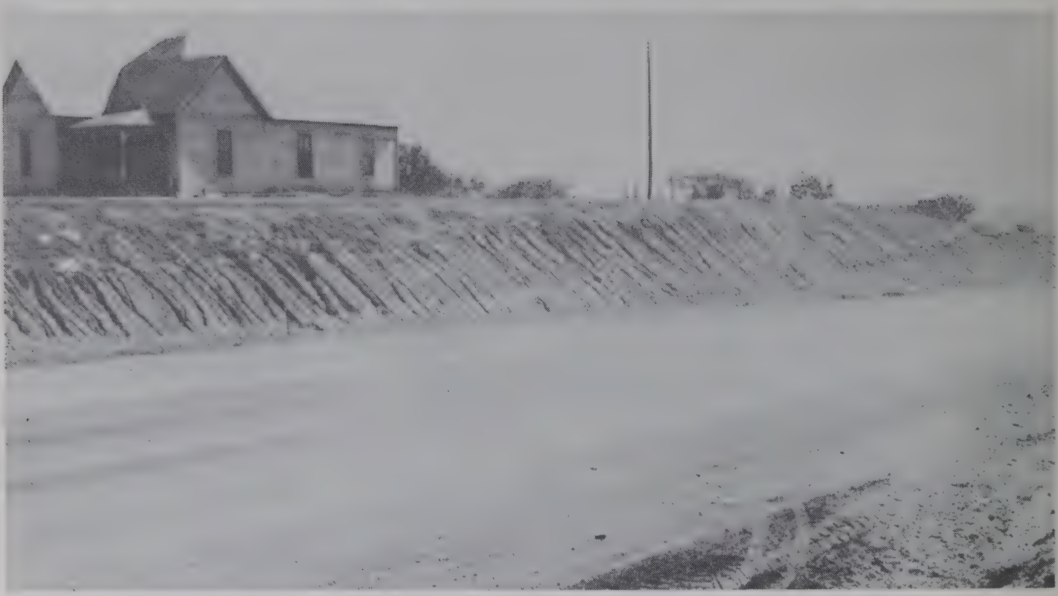
BEFORE

Slope on US Highway 67 west of Comanche before being covered with mulching. July 12, 1947. Black area in background is a portion of slope sprayed with RC-2.

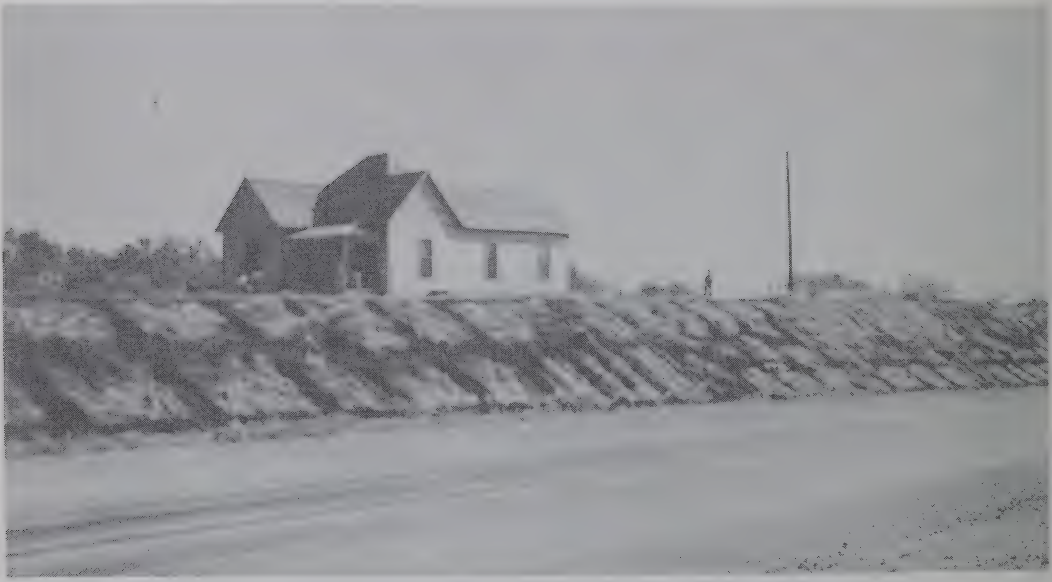


AFTER

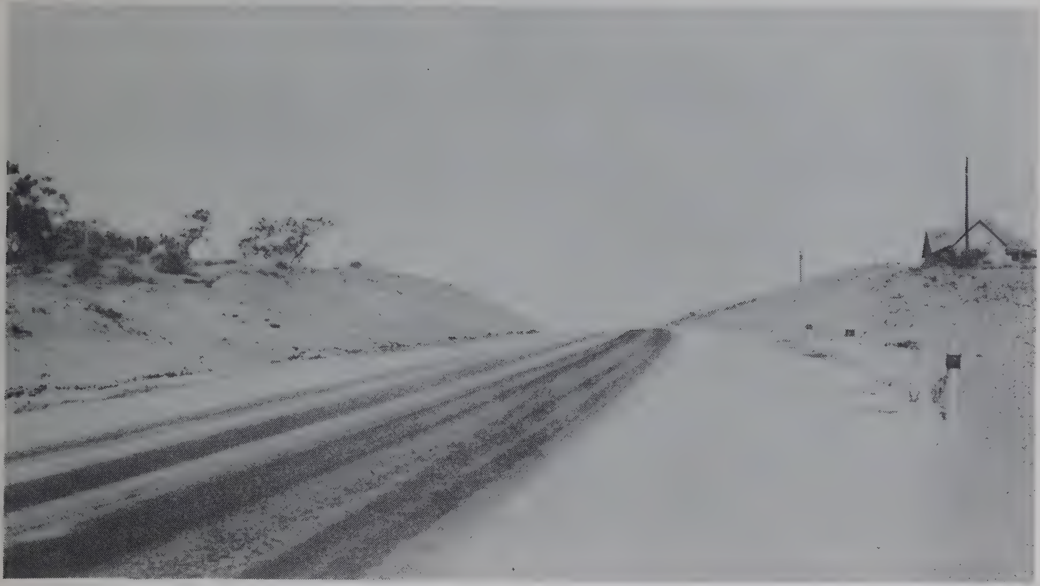
A good stand of vegetation now covers the slope and erosion has been completely eliminated. No extra seed was added, all seed was introduced with the grass mulch. June 4, 1948.



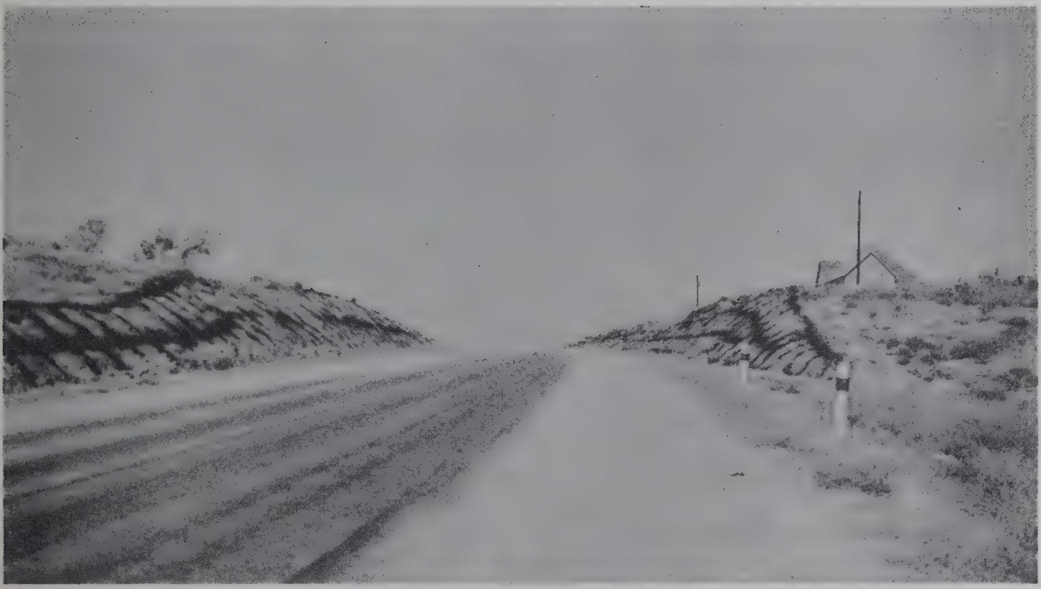
BEFORE July 19, 1948



AFTER July 19, 1949
Mulch sodding on large slope on "Cut-off"
US Highway 67, Coleman County.

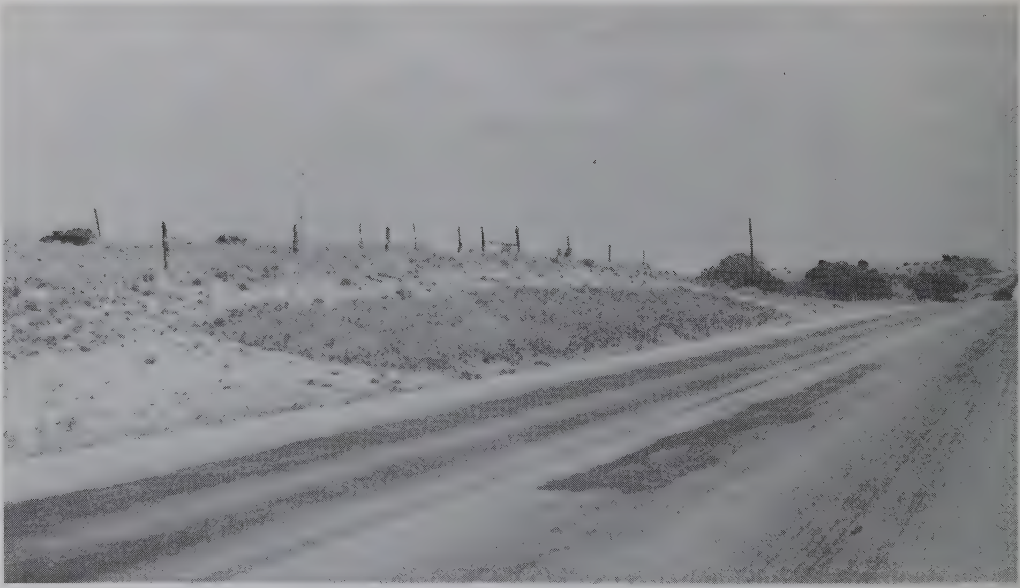


BEFORE July 19, 1948

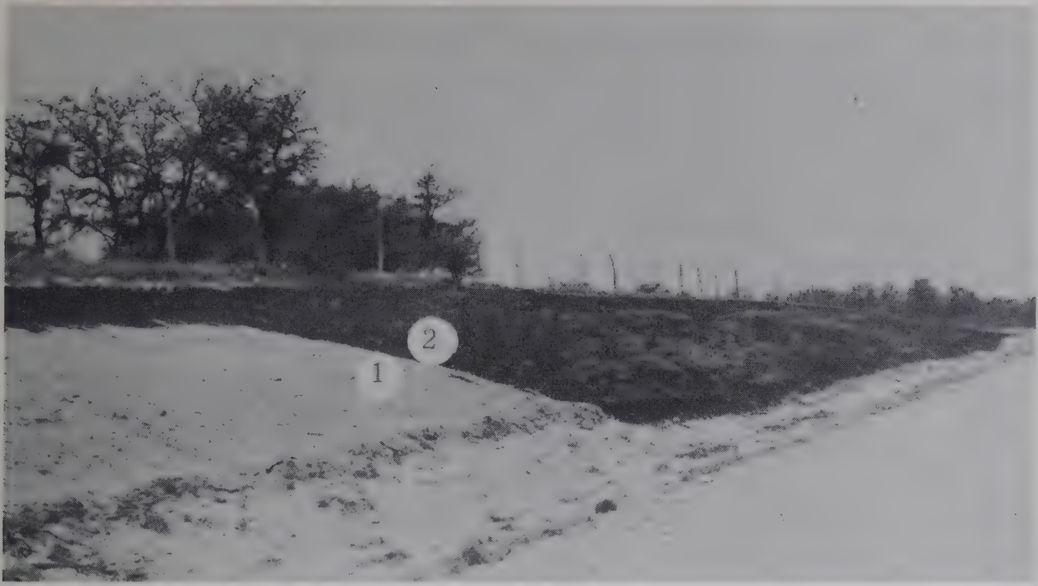


AFTER July 19, 1949
Mulch sodding on large slope on "Cut-off"
US Highway 67, Coleman County.

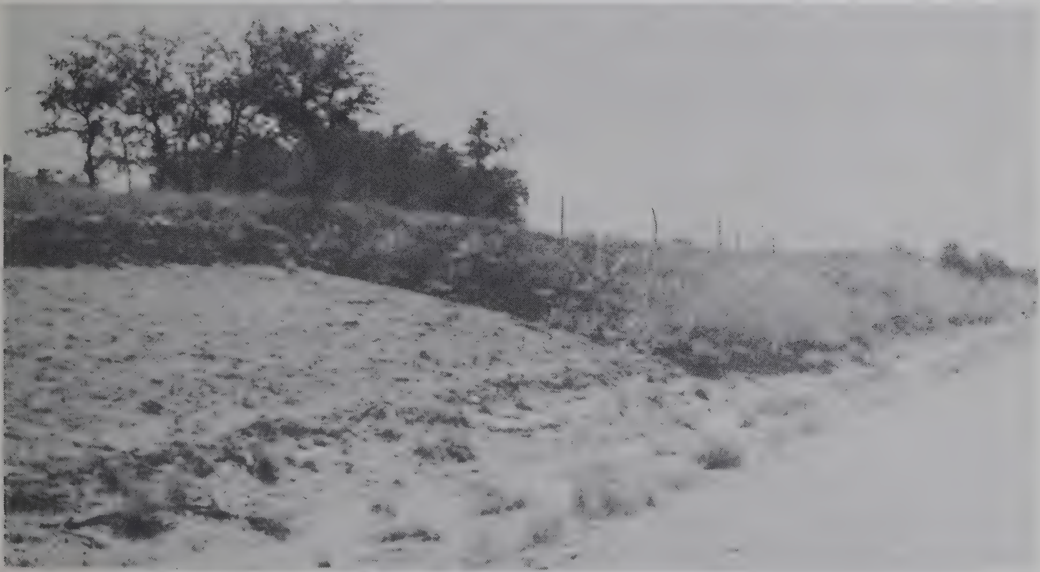
This steep and badly eroded backslope was successfully sodded, but later sloughed off because of its steepness. Clippings were delivered in a truck and then handled with pitchforks. Cost of mulching was 7 cents per square yard.
State Highway 279, five miles north of Brownwood.
July 14, 1947



A very interesting experiment with a typical backslope is shown in this picture. A portion of the slope was sprayed with 0.3 gallon RC-2, testing the theory that an abundance of seed is being blown about by the wind and all that they need is to be anchored in order to germinate. By spraying the slope enough seed were captured to establish vegetation. Contrast this area with the balance of the caliche slope where the seed were unable to gain a foothold.
State Highway 284, south of Goldthwaite. April 12, 1948.
(Second growing season).



BEFORE
Windrows from fireguards were gathered and scattered over slope. Half of slope was sprayed with RC-2 for experimental purposes. Moisture content at (1) was 5.9 and at (2) was 14.0, the two points being twelve inches apart. This difference in moisture content should account for the vigorous growth of grasses. April 12, 1948.



AFTER
Note luxuriant growth of Johnson grass and native vegetation. State Highway 284, south of Goldthwaite. June 3, 1948

"Comments From the Traveling Public"
OVER THE HIGHWAYS

. . . Would appreciate location of roadside parks marked on maps . . .

M. H. Ruggles
643 55th Street
West Palm Beach, Florida

* * *

. . . At night it was hard to determine the center of the road. Otherwise the highways were excellent . . .

Redlands, California

* * *

. . . State was very nice but loose gravel roads cost us a new windshield . . .

Robert J. Keith
340 Walnut Street
Sewickley, Pennsylvania

* * *

. . . Your roadside parks were all filthy! Take a pattern from Ohio. Yours are not fit to use . . .

A. G. Collamore
8 Erie Avenue
London, Ontario
Canada

* * *

. . . One of your highway trucks (state) passed our car while we were touring through. It was overloaded with screened gravel and was driving in excess speed with that condition. Stones blew off and made holes in our windshield and ventilator window. The truck should have been covered . . .

John Di Mundo
210 Admiral Street
Providence, Rhode Island

• • •

. . . Hats off to Texas--When we planned our vacation everyone said don't go to Texas, that is only a barren state and isn't pretty, but we went to New Orleans then to Galveston and Houston and took Route 59 up through the state and it was like driving through a park all the way. The edge of the roads were mowed and the highway in wonderful condition. We traveled all through the U. S. (except in the New England states) and Texas and Montana are the most helpful states to the tourists, but Texas has the lead over Montana. I have such a good feeling for the state of Texas I surely will tell everyone I know to make that trip. It was beautiful, and I hope to return next year and spend more time there. We spent 6 days there. Your travel attendant JK, District 20, was very helpful--even told us where we could find motels . . .

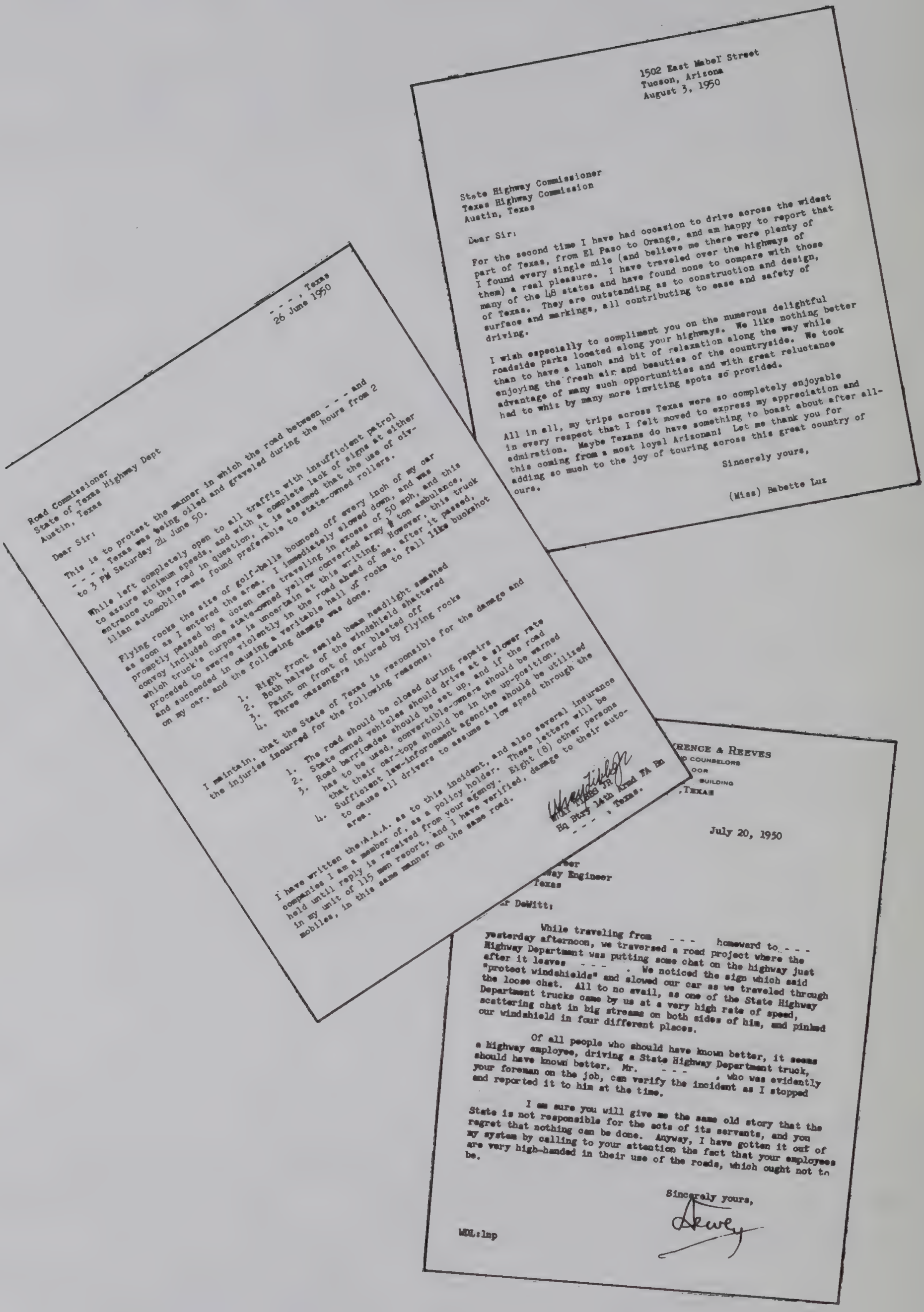
Mrs. A. E. Robinson
634 West Fourth Street
Mansfield, Ohio

• • •

. . . Traveled Texarkana - Seminole, enroute to Carlsbad . . . Returned Highway 66 through Amarillo . . . Highways excellent, though we did get a cracked headlight due to loose gravel . . .

Mr. and Mrs. H. C. Barker
919 W. Matthews
Jonesboro, Arkansas

• • •



- - - , Texas
26 June 1950

Road Commissioner
State of Texas Highway Dept
Austin, Texas

Dear Sir:

This is to protest the manner in which the road between - - - and - - - , Texas was being oiled and graveled during the hours from 2 to 3 PM Saturday 24 June 50.

While left completely open to all traffic with insufficient patrol to assure minimum speeds, and with a complete lack of signs at either entrance to the road in question, it is assumed that the use of civilian automobiles was found preferable to state-owned rollers.

Flying rocks the size of golf-balls bounced off every inch of my car as soon as I entered the area. I immediately slowed down, and was promptly passed by a dozen cars traveling in excess of 50 mph, and this convoy included one state-owned yellow converted army ¾ ton ambulance, which truck's purpose is uncertain at this writing. However, this truck proceded to swerve violently in the road ahead of me, after it passed, and succeeded in causing a veritable hail of rocks to fall like buckshot on my car. and the following damage was done.

1. Right front sealed beam headlight smashed
2. Both halves of the windshield shattered
3. Paint on front of car blasted off
4. Three passengers injured by flying rocks

I maintain, that the State of Texas is responsible for the damage and the injuries incurred for the following reasons:

1. The road should be closed during repairs
2. State owned vehicles should drive at a slower rate
3. Road barricades should be set up, and if the road has to be used, convertible-owners should be warned that their car-tops should be in the up-position.
4. Sufficient law-inforcement agencies should be utilized to cause all drivers to assume a low speed through the area.

I have written the A.A.A. as to this incident, and also several insurance companies I am a member of, as a policy holder. These letters will be held until reply is received from your agency. Eight (8) other persons in my unit of 115 men report, and I have verified, damage to their automobiles, in this same manner on the same road.

[illegible] JR
Hq Btry 14th Armd FA Bn
- - - , Texas.

1502 East Mabel Street
Tucson, Arizona
August 3, 1950

State Highway Commissioner
Texas Highway Commission
Austin, Texas

Dear Sir:

For the second time I have had occasion to drive across the widest part of Texas, from El Paso to Orange, and am happy to report that I found every single mile (and believe me there were plenty of them) a real pleasure. I have traveled over the highways of many of the 48 states and have found none to compare with those of Texas. They are outstanding as to construction and design, surface and markings, all contributing to ease and safety of driving.

I wish especially to compliment you on the numerous delightful roadside parks located along your highways. We like nothing better than to have a lunch and bit of relaxation along the way while enjoying the fresh air and beauties of the countryside. We took advantage of many such opportunities and with great reluctance had to whiz by many more inviting spots so provided.

All in all, my trips across Texas were so completely enjoyable in every respect that I felt moved to express my appreciation and admiration. Maybe Texans do have something to boast about after all-this coming from a most loyal Arizonan! Let me thank you for adding so much to the joy of touring across this great country of ours.

Sincerely yours,

(Miss) Babette Luz

RENCE & REEVES
D COUNSELORS
OOR
BUILDING
,TEXAS

July 20, 1950

ber
way Engineer
Texas

r DeWitt:

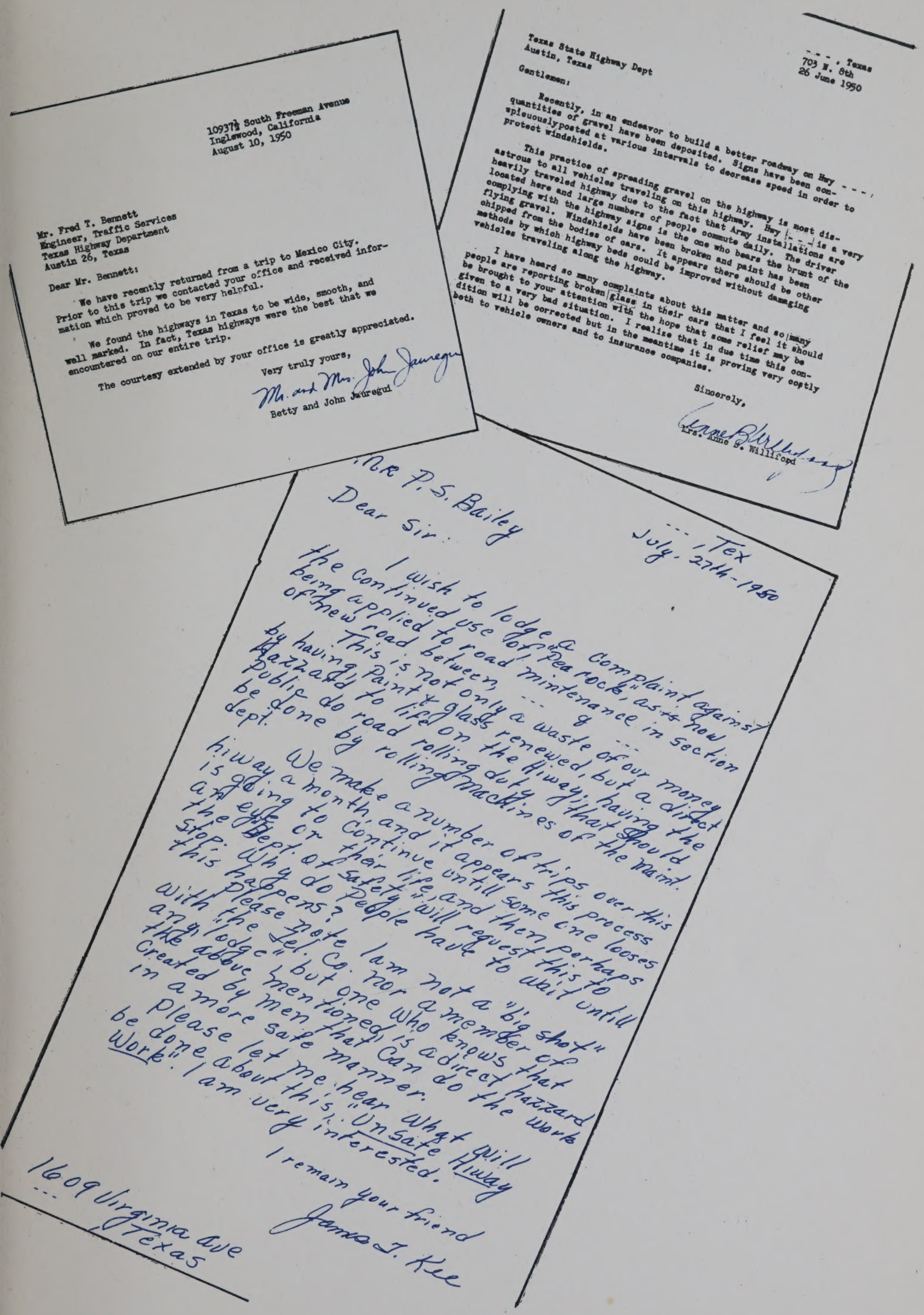
While traveling from - - - homeward to - - - yesterday afternoon, we traversed a road project where the Highway Department was putting some chat on the highway just after it leaves - - - . We noticed the sign which said "protect windshields" and slowed our car as we traveled through the loose chat. All to no avail, as one of the State Highway Department trucks came by us at a very high rate of speed, scattering chat in big streams on both sides of him, and pinked our windshield in four different places.

Of all people who should have known better, it seems a highway employee, driving a State Highway Department truck, should have known better. Mr. - - - , who was evidently your foreman on the job, can verify the incident as I stopped and reported it to him at the time.

I am sure you will give me the same old story that the State is not responsible for the acts of its servants, and you regret that nothing can be done. Anyway, I have gotten it out of my system by calling to your attention the fact that your employees are very high-handed in their use of the roads, which ought not to be.

Sincerely yours,

WDL:lmp



10937½ South Freeman Avenue
Inglewood, California
August 10, 1950

Mr. Fred T. Bennett
Engineer, Traffic Services
Texas Highway Department
Austin 26, Texas

Dear Mr. Bennett:

We have recently returned from a trip to Mexico City. Prior to this trip we contacted your office and received information which proved to be very helpful.

We found the highways in Texas to be wide, smooth, and well marked. In fact, Texas highways were the best that we encountered on our entire trip.

The courtesy extended by your office is greatly appreciated.

Very truly yours,

Mr. and Mrs. John Jauregui
Betty and John Jauregui

Texas State Highway Dept
Austin, Texas

- - - , Texas
703 N. 8th
26 June 1950

Gentlemen:

Recently, in an endeavor to build a better roadway on Hwy - - - , quantities of gravel have been deposited. Signs have been conspicuouslyposted at various intervals to decrease speed in order to protect windshields.

This practice of spreading gravel on the highway is most disastrous to all vehicles traveling on this highway. Hwy - - - is a very heavily traveled highway due to the fact that Army installations are located here and large numbers of people commute daily. The driver complying with the highway signs is the one who bears the brunt of the flying gravel. Windshields have been broken and paint has been chipped from the bodies of cars. It appears there should be other methods by which highway beds could be improved without damaging vehicles traveling along the highway.

I have heard so many complaints about this matter and so many people are reporting broken glass in their cars that I feel it should be brought to your attention with the hope that some relief may be given to a very bad situation. I realize that in due time this condition will be corrected but in the meantime it is proving very costly both to vehicle owners and to insurance companies.

Sincerely,

Anne B. Williford
Mrs. Anne B. Williford

MR P.S. Bailey

... , Tex
July. 27th-1950

Dear Sir:

I wish to lodge a complaint against the continued use of "Pea rock", as it now being applied to road mintenance in section of new road between, ... & ...

This is not only a waste of our money by having Paint & glass renewed, but a direct Hazzard to life on the Hiway; having the Public do road rolling duty. "that should be done by rolling machines of the Maint. dept.

We make a number of trips over this hiway a month, and it appears this process is going to continue untill some one looses an eye or their life, and then perhaps the "Dept. of safety" will request this to stop: Why do People have to wait untill this happens?

Please note I am not a "big shot" with "the Tel. Co. nor a member of any "lodge" but one who knows that the above mentioned is a direct hazzard Created by men that Can do the work in a more safe manner.

Please let me hear What will be done about this: "Unsafe Hiway Work". I am very interested.

I remain your friend
James J. Kee

1609 Virginia ave
... Texas